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One Hundred Eighty Day Subchronic
Oral Toxicity Study of
Pyridostigmine Bromide in Rats

(Volume 2 of 2)
(Part 2)

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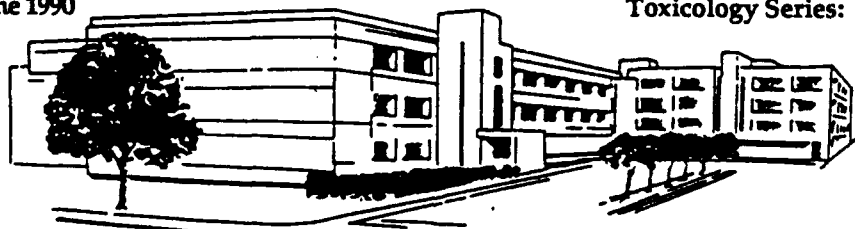
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**One Hundred Eighty Day Subchronic Oral Toxicity Study of Pyridostigmine Bromide in Rats
(Toxicology Series 253)--
Morgan *et al.***

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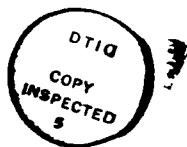
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FIELD	GROUP	SUB-GROUP	Subchronic Oral Toxicity, Pyridostigmine, Sprague-Dawley Rat, Acetylcholinesterase, Cholinesterase		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) The 180-day subchronic oral toxicity of pyridostigmine bromide was evaluated in male Sprague-Dawley rats. Pyridostigmine was administered in the diet at dose levels of 0, 1, and 10 mg/kg/day daily, and 10 mg/kg/day 5 days per week for 180 days. Following the 180-day dosing period, subgroups of animals from the control, 10 mg/kg/day, and 10 mg/kg/day 5 days/week groups were subjected to a 30-day recovery period during which the test compound was not administered. The addition of pyridostigmine to the diet resulted in dose-related decreases in plasma cholinesterase and erythrocyte acetylcholinesterase activity ranging from 25% to 63% and from 21% to 49%, respectively. The only toxic sign associated with the decrease in cholinesterase activity was increased startle reflex which was observed with increased incidence among pyridostigmine-treated animals. Blood samples taken at necropsy for hematological and serum chemistry analyses exhibited no					
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19 (cont.) significant ($p \leq 0.05$) abnormalities that could be attributed to pyridostigmine after 180 days of dosing. Increases in aspartate aminotransferase, lactate dehydrogenase, and creatine phosphokinase were observed at Day 210, 30 days after withdrawal of the test compound, but the changes could not be attributed to compound administration/withdrawal. No compound-related changes in food or water consumption or body weights were observed, and no morphologic signs of pyridostigmine-induced toxicity were detected during necropsy or subsequent microscopic examination of the tissues. These findings indicate that pyridostigmine bromide, when administered for 180 days to rats at doses that produce up to 63% inhibition of cholinesterase activity, produces little subchronic toxicity other than that attributable to cholinesterase inhibition.



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Appendix L: INDIVIDUAL ANIMAL HISTORIES**DAY 180 SACRIFICE**

0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00517	Material, Red, Nose Irritable	Dec 27,28	Slight
		Dec 29-31, Jan 4-16	
	Aggressive	Jan 21-26,28, Feb 3,4	
		Mar 11-14,22, May 2-4	Marked
		Jan 30, Feb 2,5-Mar 10	
		Mar 15-20,23-31	
86D00532	Stain, Red, Nose	Apr 3-6	Marked
		Feb 18	Slight
	Stain, Yellow, Perianal	Dec 12	Slight
		Jan 19-29	Slight
	Alopecia, Front Legs	Jan 22,29	Slight
		Jan 23-27, Feb 2,3	
	Material, Dark, Nose	Feb 12-17,19-25	
		Mar 2-6,19,20,23-25	
	Irritable	Apr 6,7,21	Moderate
		Feb 2,3	Slight
	Stain, Brown, Leg	Feb 18	Slight
	Stain, Red, Nose	Mar 4	Slight
	Material, Red, Neck	Mar 7-16	Marked
	Aggressive	Mar 30-Apr 6	Moderate
	Stain, Red, Eye	Apr 8-15	Moderate
	Material, Red, Eye		
86D00538	Stain, Red, Nose	Feb 7,8	Moderate
	Vocalization	Mar 19	Slight
	Aggressive	Mar 20	Slight
86D00558	Inactive	Nov 7, Jan 17	Slight
	Incr. Startle Reflex	Nov 13, Jan 2	Slight
	Material, Red, Nose	Dec 3, Apr 5,6	Slight
	Material, Dark, Nose	Dec 17,24,25, Mar 25	Moderate
	Stain, Red, Nose	Jan 1,4,28, Feb 10	Slight
	Irritable	Jan 6,13,20, Feb 3	
		Feb 13-18,23-27	
		Mar 2,3,5,6,19,20	
	Rough Coat	Apr 6,7	Slight
		Jan 14-24,29-Feb 3	Moderate

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 180 SACRIFICE

0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00558 (cont.)	Stain, Dark, Nose	Jan 29,30, Feb 25	
		Mar 9,10	Slight
	Stain, Red, Ear	Feb 4	Slight
	Conjunctivitis	Feb 5-21	Moderate
	Stain, Red, Eye	Feb 5-8,10-16	Moderate
	Stain, Brown, Nose	Feb 9	Slight
86D00576	Irritable	Nov 17,20, Jan 6,27	
		Mar 25, Apr 6-9	Moderate
	Rough Coat	Jan 19,20	Slight
	Alopecia, Hind Leg	Feb 2-12	Slight
	Stain, Red, Nose	Feb 5,20	Slight
	Aggressive	Feb 6-8, Mar 26-Apr 2	Slight
	Stain, Dark, Nose	Mar 9-11	Slight
86D00578	Rough Coat	Jan 19,20	Slight
	Stain, Red, Nose	Feb 7,11,18,25,26	Moderate
	Irritable	Mar 13-16, May 5-7	Slight
	Material, Red, Nose	Mar 23	Slight
	Stain, Brown, Nose	Mar 25	Slight
86D00579	Irritable	Nov 18	Slight
	Material, Red, Nose	Dec 3	Slight
	Material, Dark, Nose	Dec 17,19,22,25,27	
		Jan 26, Mar 11	Slight
	Stain, Red, Nose	Jan 10,18,21,29	
		Feb 5	Slight
	Stain, Dark, Nose	Feb 12	Slight
	Stain, Orange, Nose	Feb 23,24	Slight
	Aggressive	Mar 23-25	Slight
86D00584	Irritable	Nov 12,14,18	
		Dec 6,11,12,24,28-30	
		Jan 5-7,11,14,15	
		Jan 26-28, Feb 2-6	
		Feb 8,9,11,12,18,24	
		Feb 27, Mar 3,18-21	Moderate

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES**DAY 180 SACRIFICE**

0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00584 (cont.)	Irritable	Mar 23,25-27	
		Mar 30-Apr 3,28,29	
		May 2-6	Moderate
	Material, Red, Nose	Dec 6	Slight
	Material, Dark, Nose	Jan 26,27, Feb 13	Slight
	Alopecia, Front Legs	Jan 29, Feb 11-20	
		Feb 27-May 7	Marked
	Stain, Brown, Nose	Feb 2,3	Slight
	Stain, Red, Nose	Feb 5-8,27-Mar 1	Slight
	Scab, Front Leg	Mar 9-16	Slight
	Stain, Brown, Legs	Apr 5-May 7	Slight
	Aggressive	Apr 5,6,13-27,30	Moderate
86D00715	Irritable	Dec 23, Jan 6,10	
		Feb 17,18, Apr 5	Moderate
	Material, Dark, Nose	Dec 24, Feb 7,21,22	Slight
	Stain, Red, Nose	Jan 1,2,9,14	Slight
	Material, Red, Eye	Feb 4,5	Moderate
	Material, Dark, Eye	Feb 9,23-25, Mar 13-21	Slight
	Material, Red, Nose	Feb 12,13	Slight
	Conjunctivitis	Feb 22	Slight
	Aggressive	Apr 4	Slight
86D00725	Stain, Red, Nose	Jan 2,3,11, Mar 9,10	Slight
	Stain, Red, Back	Jan 3	Slight
	Irritable	Jan 4,10,12,13,26,27	
		Jan 29,30, Feb 2-9,11	
		Feb 20-22, Mar 7,8	
		Mar 18-20,23-27	
		Apr 5-9,20-May 4	Marked
	Stain, Red, Legs	Jan 11,18-21	Moderate
	Stain, Brown, Legs	Jan 22-Feb 5,7-May 7	Moderate
	Rough Coat	Feb 5	Slight
	Alopecia, Front Legs	Feb 19-Mar 3,8-29	
		Apr 15-19	Slight
	Aggressive	Mar 9-16	Slight
	Material, Red, Nose	Mar 15,16,22-24	Slight
	Incr. Startle Reflex	Mar 30-Apr 1	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 210 SACRIFICE

0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00540	Material, Red, Nose	Dec 1	Slight
	Irritable	Dec 29, Mar 5, 6, 19, 20	Moderate
	Stain, Dark, Foot	Jan 8	
	Material, Dark, Nose	Jan 29	Slight
	Stain, Brown, Nose	Feb 13	Slight
	Stain, Red, Nose	Mar 5, May 24	Slight
	Stain, Red, Eye	Mar 6	Slight
	Aggressive	May 7-10, 22, 23, 25	Slight
86D00585	Stain, Brown, Perianal	Nov 14	Slight
	Incr. Startle Reflex	Nov 20, Dec 25	Slight
	Irritable	Jan 28, Feb 2, 26	
		Mar 18-20, 25	Slight
	Stain, Red, Nose	Mar 8	Slight
86D00614	Material, Red, Nose	Dec 24, 25, Feb 4, 23	
		Feb 24	Moderate
	Material, Eye	Jan 7	Slight
	Stain, Red, Nose	Jan 9, 10, 21, Apr 1	
		May 24	Slight
	Rough Coat	Jan 19-28	Slight
	Material, Dark, Nose	Jan 26-28, Feb 2, 7, 11	Slight
	Irritable	Feb 10, Mar 13-16	Slight
86D00647	Aggressive	Apr 4, May 2-4, 7-23	Slight
	Material, Red, Nose	Dec 3	Slight
	Irritable	Jan 5, 6, 8, 9, Feb 5-8	
		Feb 20-22, Mar 7, 18-20	
		Mar 23-31, Apr 6, 7	Marked
	Rough Coat	Feb 6-9	Slight
	Stain, Red, Nose	Feb 21, Mar 7	Slight
	Aggressive	Apr 5	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 210 SACRIFICE

0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00665	Material, Red, Nose	Dec 7	Slight
	Incr. Startle Reflex	Dec 17	Slight
	Material, Dark, Nose	Dec 24, Feb 11, Mar 23	Slight
	Irritable	Dec 29, Jan 4, Feb 5, 6	
		Feb 13-18, 25, Mar 3-7	
		Mar 9-16, 18-20, 23-27	
		Mar 30-Apr 2	
		Apr 28-May 23, 25-31	Moderate
	Stain, Red, Nose	Jan 4	Slight
	Alopecia, Front Leg	Jan 11-Feb 12, 18-22	
		Feb 27-May 31	Marked

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 180 SACRIFICE

1.0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00503	Irritable	Nov 21, Dec 24 Jan 10-12, Feb 6, 12-16 Feb 18-22, 25-27 Mar 2, 5-7, 9, 10, 12-20 Mar 24-29, Apr 6	Marked
86D00515	Irritable	Nov 14, Dec 22-30 Jan 1-6, 11, 12, 27, 28 Feb 12-16, Mar 7, 30 Mar 31, Apr 13, 14 May 2	Moderate
	Material, Red, Nose	Dec 7, Feb 20-22	Slight
	Incr. Startle Reflex	Dec 24	Slight
	Rough Coat	Jan 28-Feb 3 Mar 21, 22	Moderate
	Aggressive	Mar 8-20, Apr 4, 5 Apr 15-21	Marked
	Stain, Red, Nose	Mar 13	Slight
86D00549	Material, Red, Nose	Dec 17, 18	Slight
	Material, Dark, Nose	Dec 22, 28, Mar 4	Slight
	Irritable	Dec 23, 24, 29-Jan 3 Jan 5, 6, 27, Feb 5 Mar 10, 11, Apr 7 Apr 28-30, May 2	Moderate
	Material, Clear, Nose	Dec 26	Slight
	Stain, Red, Nose	Feb 12, 13, 18, Mar 9	Moderate
	Aggressive	Mar 5, Apr 5, 6	Moderate
86D00582	Stain, Red, Nose	Jan 4	Slight
	Alopecia, Legs	Jan 12-Apr 4, 6-30 May 2-5	Marked
	Scab, Leg	Jan 29	Slight
	Irritable	Mar 12-18, Apr 6-12	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES**DAY 180 SACRIFICE**

1.0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00594	Irritable	Nov 12, Dec 26-30	
		Jan 4, 11-13, 26, 28	
		Feb 4, 9-16, 19, 20	
		Feb 25-27, Mar 2-5	
		Mar 24, 25, 30-Apr 2	
	Material, Red, Nose Stain, Red, Nose Rough Coat Aggressive Stain, Brown, Eye Stain, Brown, Nose Diarrhea	Apr 5-9, 20-23	Marked
		Dec 26, Mar 4	Slight
		Jan 8, 21, 22	Moderate
		Jan 31, Feb 1	Slight
		Feb 23, 24, Mar 18-20	Moderate
		Apr 20	Slight
		Apr 20	Slight
		Apr 21, 22	Present
86D00610	Stain, Yellow, Perianal Irritable	Nov 12	Slight
		Nov 12, 13, Dec 15, 16	
		Dec 22, 25, 27-29	
		Jan 5-7, 10-13, 16	
		Jan 23-27, 29, 30, Feb 6	
	Material, Red, Nose Stain, Red, Nose Aggressive	Feb 11, 13-16, 21-Mar 1	
		Mar 8-10, May 2-7	Marked
		Dec 28, Feb 11	Slight
		Feb 13, 19	Moderate
		Mar 2-7, 11-20	
		Mar 23-Apr 12	Slight
86D00653	Irritable	Nov 12, 13, 24-26, Dec 2	
		Dec 19-21, 24, 25, 27-30	
		Jan 3, 6, 8, 10-15, 28	
		Feb 12, Mar 5-7, 11-17	
		Mar 24-27, Apr 7, 21	
	Material, Red, Nose Stain, Red, Nose	May 2	Marked
		Dec 27	Slight
		Jan 2, 3, 10, 14, 15	
		Feb 26-Mar 1, 23	
		Mar 26-29, Apr 1, 2	Moderate

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 180 SACRIFICE

1.0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00653 (cont.)	Aggressive	Jan 9, Feb 11 Feb 27-Mar 4, 8-10 Mar 30-Apr 6	Marked
	Stain, Red, Legs	Jan 10	Slight
	Stain, Brown, Leg	Jan 12, 13, 26-30, Feb 2	
		Feb 3, 9-13	Slight
	Material, Dark, Nose	Jan 21-23, 29, Feb 7-12	
		Apr 5-14	Slight
	Alopecia, Front Legs	Jan 31-Feb 3, 21, 22	
		Feb 26-May 7	Slight
	Stain, Red, Head	Feb 5	Slight
	Material, Brown, Nose	Feb 13	Slight
	Stain, Dark, Nose	Feb 21-23, Mar 9	Slight
	Stain, Dark, Eye	Apr 6	Slight
	Stain, Brown, Nose	Apr 20	Moderate
86D00693	Material, Yellow, Nose	Dec 1	Slight
	Irritable	Dec 29, Jan 1, 5, 8, 11-14 Jan 16, 21, 22, 27, 28 Feb 2-6, 19, 23, 24	
		Mar 3, 4, May 2	Marked
	Aggressive	Jan 9, 10, 23-26 Feb 7-16, 21, 22 Feb 25-Mar 2, 5-20	
		Mar 23-Apr 29	Marked
	Material, Red, Nose	Feb 12	Moderate
	Stain, Brown, Nose	Feb 20	Slight
	Stain, Red, Nose	Feb 22	Slight
86D00710	Incr. Startle Reflex	Nov 21	Slight
	Irritable	Dec 15, 24, Jan 13 Feb 13-16, Mar 12-20	Moderate
	Rough Coat	Jan 19, 20	Slight
	Stain, Red, Nose	Jan 26, 27, Mar 30, 31	Slight
	Material, Red, Foot	Feb 9, 10	Moderate
	Stain, Red, Foot	Feb 11-13	Present
	Alopecia, Leg	Mar 1	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES**DAY 180 SACRIFICE**

1.0 mg/kg/day PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00732	Irritable	Nov 13,14,17-22	
		Dec 3,4,12,15,16	
		Dec 20,21,Jan 8,22	Moderate
	Incr. Startle Reflex	Nov 20,Jan 4,21	Moderate
	Aggressive	Nov 24,Dec 17-19,22	
		Dec 24-Jan 7,9-18	
		Jan 23-Feb 2	
		Feb 4-Mar 20,23-May 7	Marked
	Rough Coat	Dec 10,12-14,17-22	Slight
	Material, Red, Nose	Dec 11,28-Jan 8,16	
		Mar 23	Moderate
	Stain, Red, Nose	Jan 19,26-30,Feb 1	
		Feb 25,Mar 5,9,31	
		Apr 6	Moderate
	Material, Dark, Nose	Feb 8	Slight
	Material, Dark, Eye	Feb 25	Slight
	Stain, Brown, Nose	Mar 19	Slight
	Chewing	Apr 6	Moderate

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 180 SACRIFICE

10.0 mg/kg/day, daily PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00534	Irritable	Dec 17,18,24,29	
		Jan 3,5,12,23-28	Moderate
	Stain, Red, Nose	Jan 1, Feb 5	Slight
	Material, Brown, Nose	Jan 30	Slight
	Material, Dark, Nose	Feb 21	Slight
	Aggressive	Mar 19,20,23-31	Slight
86D00536	Irritable	Nov 12, Jan 23-25,30	
		Mar 6-10,12-20,23,24	Marked
	Incr. Startle Reflex	Nov 14	Slight
	Stain, Yellow, Perianal	Nov 18	Slight
86D00572	Stain, Red, Nose	Jan 4	Moderate
	Irritable	Feb 13-17,22	Moderate
	Aggressive	Apr 13-19	Slight
86D00603	Irritable	Nov 12, Dec 15-24,28	
		Jan 4-6,9,10,13,16	
		Jan 26-30, Feb 3-7	
		Mar 6-12,22, May 7	Marked
	Incr. Startle Reflex	Dec 24	Slight
	Alopecia, Front Legs	Jan 12-20,31-Apr 27	
		May 2-4	Moderate
	Rough Coat	Jan 19,20,28,29	Slight
	Stain, Red, Nose	Feb 6,7,21-23,25,26	
		Apr 2	Moderate
	Aggressive	Feb 8-Mar 5,13-20	
		Mar 23-Apr 6,20-30	Moderate
86D00613	Rough Coat	Jan 19-21	Slight
	Irritable	Feb 21,22	Marked
	Aggressive	Feb 23-27, Mar 9,12-20	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 180 SACRIFICE

10.0 mg/kg/day, daily PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00638	Incr. Startle Reflex	Nov 13	Slight
	Material, Dark, Nose	Nov 19, Feb 13	Slight
	Material, Red, Nose	Dec 1, Mar 11, 22-25	Slight
	Irritable	Jan 3, Apr 5	Moderate
	Stain, Red, Nose	Jan 4, 28	Slight
	Stain, Brown, Nose	Apr 27-29	Moderate
86D00658	Incr. Startle Reflex	Nov 13, Jan 1	Slight
	Irritable	Dec 12, Jan 5, 11, 12	
		Mar 9, 23-25, Apr 5	Marked
	Stain, Red, Nose	Dec 14	Slight
	Material, Red, Nose	Feb 5, 6	Moderate
86D00662	Aggressive	Mar 15-20, Apr 4	Moderate
	Material, Red, Nose	Dec 28, Mar 22, 23	Slight
	Incr. Startle Reflex	Jan 1, Feb 5-7	Slight
	Irritable	Jan 8, 11, 29, Feb 21, 22	
		Feb 26, Mar 2-5, 13-15	
		Mar 19, 20	Marked
	Stain, Red, Nose	Jan 11, 19, Feb 18, 19	
		Feb 21, 22, Mar 5-9	
		Mar 30, 31, Apr 4	Marked
	Stain, Brown, Nose	Feb 13-16, Mar 19, 20	Moderate
	Aggressive	Feb 13-17, 23-25	
86D00671		Mar 23-31, Apr 5, 6	Slight
	Stain, Dark, Nose	Feb 26, 27	Slight
	Material, Dark, Nose	Mar 4	Slight
	Material, Red, Nose	Dec 19, Feb 20, 21	Slight
	Irritable	Jan 4, 5, 9-12	
		Feb 13-16, 19, 22	
		Apr 4, 5	Marked
	Stain, Red, Nose	Jan 11, Feb 25	Slight
	Stain, Dark, Nose	Jan 21	Slight
	Jumping	Feb 3	Slight
	Material, Dark, Nose	Feb 11, 12	Slight
	Material, Brown, Nose	Mar 11	Slight
	Aggressive	Apr 24-27	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES**DAY 180 SACRIFICE**

10.0 mg/kg/day, daily PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00701	Irritable	Dec 17,18,27,28	
		Feb 8-10,17,19	
		Feb 27-Mar 4	Marked
	Stain, Red, Nose	Feb 5,25, Apr 3,13,14	
		Apr 24,25	Moderate
	Aggressive	Feb 23-26	
		Mar 23-Apr 7, May 2-4	Moderate
	Material, Dark, Nose	Mar 5	Slight
	Material, Red, Nose	Mar 22	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 210 SACRIFICE (30 day recovery)

10.0 mg/kg/day, daily PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00559	Irritable	Nov 13, Dec 17, 22	
		Jan 27, 28, Feb 5	
		Mar 11, 12, 23-29	
		Apr 5	Moderate
	Stain, Red, Nose	Jan 1, 14, Feb 1, 19, 21	
		Feb 22, Mar 21	Slight
	Stain, Red, Ear	Jan 2, 3, 4	Slight
	Incr. Startle Reflex	Jan 2, 3	Slight
	Stain, Red, Neck	Jan 4, Mar 30, 31	Slight
	Aggressive	Jan 26	Slight
	Material, Red, Nose	Feb 8-10	Slight
	Stain, Red, Head	Feb 20-22	Slight
	Material, Dark, Nose	Apr 5	Slight
86D00571	Material, Dark, Nose	Dec 28, 29	Slight
	Stain, Red, Nose	Jan 2, 10, 26-29, Feb 5	
		Feb 8-10, 12, 25, 26	
		Mar 9-11, 23	Moderate
	Rough Coat	Jan 19, 20	Slight
	Stain, Front Leg	Jan 28, Feb 20-May 31	Marked
	Stain, Dark, Nose	Jan 30	Slight
	Alopecia, Front Leg	Feb 9-Apr 6, 13-27	
		May 6-31	Moderate
	Scab, Leg	Feb 18, May 12, 13	Slight
	Material, Red, Nose	Feb 19, 20, 23	Moderate
	Irritable	Feb 20, Mar 17, Apr 7	
86D00608		May 7-11, 26	Slight
	Irritable	Dec 29, Jan 9, Mar 5-7	
		Mar 25	Slight
	Rough Coat	Jan 19, 20	Slight
	Stain, Red, Nose	Mar 13, 24	Marked

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 210 SACRIFICE (30 day recovery)

10.0 mg/kg/day, daily PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00622	Material, Red, Nose	Dec 3, Feb 20	Slight
	Stain, Red, Nose	Jan 4, 18	Slight
	Irritable	Jan 21, Feb 6, 21	
		Mar 19, 20, 22	Slight
	Aggressive	Jan 30, Mar 23-Apr 1	Slight
	Rough Coat	Feb 5-8	Slight
	Swollen, Red, Feet	Feb 12, 13	Moderate
86D00651	Incr. Startle Reflex	Nov 13	Slight
	Rough Coat	Dec 26-28	Slight
	Irritable	Jan 4, 10, 12, 14	
		Mar 6-8, 25, May 7-11	Moderate
	Stain, Red, Nose	Jan 11	Slight
	Aggressive	Jan 26-30, Feb 4-27	
		Mar 5, 11-20, Apr 4-6	
		Apr 15-21, May 22, 23	
		May 27, 28	Marked
	Stain, Brown, Nose	Apr 20, 21	Slight
	Material, Red, Nose	May 27	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 180 SACRIFICE

10.0 mg/kg/day, 5 days/week PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00516	Incr. Startle Reflex	Nov 14, Jan 7	Slight
	Stain, Red, Nose	Jan 1, 28	Slight
	Irritable	Jan 5, 6, 10, 30, Mar 6	
		Mar 9, 15, 25-Apr 2	Moderate
	Alopecia, Hind Leg	Feb 2, 3	Slight
	Alopecia, Front Leg	Mar 30-Apr 2, 6-May 4	Slight
86D00535	Incr. Startle Reflex	Nov 13, Jan 1	Moderate
	Irritable	Dec 1-5, 28-Jan 1, 3-6	
		Jan 8, 10-12, 14-16	
		Jan 22-26, May 1	Moderate
	Aggressive	Dec 17-19, 22-27	
		Jan 7, 9, 27-30, Feb 2-9	
		Feb 11-Mar 20, 23-25	
		Mar 30-Apr 14	Marked
	Rough Coat	Dec 22-28, Jan 10-14	Slight
	Stain, Red, Nose	Jan 1, 2, 31, Mar 13	Slight
	Material, Brown, Nose	Jan 22	Slight
	Material, Dark, Nose	Feb 13	Slight
86D00560	Material, Red, Nose	Mar 4	Slight
	Stain, Brown, Nose	May 2, 3	Slight
	Material, Red, Nose	Dec 3, 17, 19-21, Mar 5	Moderate
	Irritable	Jan 4, 5, Feb 4-9, 11	
		Feb 21-24, Mar 7-10	
		Mar 25, Apr 6	Marked
86D00569	Stain, Red, Nose	Jan 4, 5, 7, 19, 20	
		Apr 4	Moderate
	Aggressive	Feb 25-Mar 6, 11-20	
		Mar 23, Apr 3-5	Moderate
	Irritable	Nov 12, Dec 1, 2, 26, 27	
		Jan 4, 5, 11, Mar 13-17	
86D00569		Apr 4, 5	Moderate
	Stain, Brown, Nose	Nov 16	Slight
	Material, Red, Nose	Dec 25, 26, Feb 20	Moderate
	Material, Dark, Nose	Dec 23	Slight
	Stain, Red, Nose	Jan 29, Feb 8, Apr 1	Moderate
	Aggressive	Mar 23, Apr 6	Moderate

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 180 SACRIFICE

10.0 mg/kg/day, 5 days/week PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00597	Irritable	Nov 13-15, 17, 18, 20-22	
		Nov 25-29, Dec 10-12	
		Dec 14-25, 29, Jan 3-9	
		Jan 11-16, 18-29, 31	
		Feb 1, Mar 25, Apr 20-24	Marked
	Aggressive	Dec 26-28, Jan 9, 10	
		Jan 30, Feb 2-Mar 20	
		Mar 23, 30, 31, Apr 3-8	
		May 1-4	Marked
	Rough Coat Stain, Red, Nose Stain, Brown, Leg Stain, Red, Leg Stain, Leg Dehydrated	Jan 16-19	Slight
		Feb 5, 25, 26	Moderate
		Mar 2-5, Apr 1-8, 13-25	Slight
		Mar 30, 31	Slight
		Apr 26-30	Slight
		May 5	Slight
86D00616	Material, Red, Nose Stain, Red, Nose	Dec 1, Feb 19, 20	Moderate
		Jan 7, Feb 5, 7	Slight
	Incr. Startle Reflex	Feb 5, 6	Moderate
	Stain, Dark, Nose	Feb 26	Slight
	Irritable	Mar 6, Apr 6	Slight
	Aggressive	May 3, 4	Slight
86D00623	Inactive Irritable	Nov 6	Slight
		Nov 12, 18, 20, 24-26	
		Dec 1, 2, 5, 10, 11	
		Dec 16-19, 21, 22	
		Dec 24-Jan 29	
		Jan 31-Feb 4, Mar 10	
		Mar 21, 22, 30, 31	
		Apr 20, 21, 26-30	Marked
	Stain, Red, Nose	Nov 27, 28, Jan 28	Slight
	Material, Red, Nose	Dec 17, 26, Jan 26	Slight
	Stain, Brown, Perianal	Jan 9	Slight
	Rough Coat	Jan 18-20, 22	Slight

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 180 SACRIFICE

10.0 mg/kg/day, 5 days/week PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00623 (cont.)	Aggressive	Jan 30, Feb 5-Mar 9 Mar 11-20, 23-29, Apr 1 Apr 4-19, May 1-5	Marked
	Material, Dark, Nose	Mar 4	Moderate
	Stain, Brown, Mouth	Mar 8	Slight
	Chewing	Apr 6, 7	Marked
86D00654	Incr. Startle Reflex	Nov 12	Slight
	Material, Red, Nose	Dec 1, 5, 17, 24	Slight
	Material, Dark, Nose	Dec 26, 28	Slight
	Irritable	Jan 1, Apr 26-28 May 1	Moderate
	Stain, Red, Nose	Jan 8, Feb 7-9, 11, 21 Feb 22, 25, 26, Mar 30 Mar 31	Moderate
	Stain, Brown, Nose	Mar 11, Apr 3, 4	Slight
	Aggressive	Mar 23-31, Apr 3, 8 May 2-5	Moderate
86D00660	Irritable	Nov 12, 14, 15, Dec 5, 25 Jan 1, 3, 5, 11, 13, 14 Jan 22-25, Feb 1-3 Feb 11-20, 25-27 Mar 4, 6, 8-18, Apr 4-6	Moderate
	Stain, Red, Nose	Jan 12, 19	Slight
	Alopecia, Front, Leg	Jan 12-19, Feb 21, 22	Slight
	Rough Coat	Jan 19	
	Material, Dark, Nose	Jan 30	Slight
	Stain, Brown, Nose	Feb 12-18	Slight
	Material, Red, Nose	Feb 23, 24	Slight
86D00729	Irritable	Dec 28, Jan 1, 4, 11 Feb 2, 3, 22, Mar 1, 19 Mar 20, 23, 24, Apr 5-7	Moderate

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 210 SACRIFICE (30 day recovery)

10.0 mg/kg/day, 5 days/week PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00518	Incr. Startle Reflex	Nov 14,21	Slight
	Material, Red, Nose	Dec 3,17,18	Slight
	Stain, Red, Nose	Jan 1-3,10,11,30	
		Feb 7-9,22,May 24	Moderate
	Irritable	Jan 15, Feb 23-26	
		Mar 12-14,17-20	
		Apr 20,21	Moderate
	Material, Dark, Nose	Jan 26, Feb 21	Slight
	Stain, Brown, Nose	Apr 20,21,24,25	Moderate
86D00524	Irritable	Nov 18,20, Dec 1,5,18	
		Dec 22,26,27, Jan 5	
		Jan 8-10,12,28,29	
		Feb 2,4-9,11-26	
		Mar 25-29, Apr 6,7	Marked
	Incr. Startle Reflex	Nov 20-22, Dec 24	Slight
	Inactive	Dec 5	Slight
	Aggressive	Dec 17, Jan 22-27,30	
		Feb 27, Mar 4-6,9-20	
		Mar 23,30-Apr 1	
		May 22,23	Moderate
	Material, Dark, Nose	Dec 26,27, Mar 4,5	Moderate
	Alopecia, Front Leg	May 7-11	Slight
	Stain, Red, Nose	May 24	Slight
86D00537	Irritable	Nov 12, Dec 15, Jan 4-6	
		Jan 8,9,12,23-29	
		Feb 2,3,7-9,11-19	
		Feb 21-25, Mar 15,19	
		Mar 20,27-29	Moderate
	Material, Red, Nose	Feb 20	Slight
	Stain, Red, Nose	Mar 9	Slight
	Inactive	Mar 30,31	Slight
	Alopecia, Front Legs	May 22-31	Moderate

Appendix L (cont.): INDIVIDUAL ANIMAL HISTORIES

DAY 210 SACRIFICE (30 day recovery)

10.0 mg/kg/day, 5 days/week PYRIDOSTIGMINE BROMIDE

Animal Number	Clinical Signs	Dates Observed (1986/1987)	Severity
86D00547	Incr. Startle Reflex	Nov 14, Dec 24, Jan 1-4	Slight
	Material, Red, Nose	Dec 17, Mar 4	Slight
	Irritable	Jan 5, 26, Feb 2, 3	Slight
	Stain, Red, Mouth	Jan 10	Slight
	Material, Dark, Nose	Jan 30	Slight
	Aggressive	Mar 23	Slight
86D00591	Diarrhea	Nov 7	Present
	Material, Red, Nose	Nov 20	Slight
	Irritable	Dec 1, 11, 14, Jan 5, 11	
		Feb 2, 3, 6-9, 23-26	
		Mar 2-4, 12, 18-20, 22	
		Mar 23, Apr 6, 7	Moderate
	Incr. Startle Reflex	Jan 1-3	Slight
	Aggressive	Apr 4-7	Slight

Appendix M: SERUM CHEMISTRY**List of Serum Chemistry Abbreviations/Units**

ACHE	Erythrocyte Acetylcholinesterase (U/ml)
CHE	Plasma Cholinesterase (U/ml)
ALT	Alanine Aminotransferase (U/l)
AST	Aspartate Aminotransferase (U/l)
ALK	Alkaline Phosphatase (U/l)
LDH	Lactate Dehydrogenase (U/l)
CK	Creatine Phosphokinase (U/l)
BILI	Total Bilirubin (mg/dl)
CHOL	Cholesterol (mg/dl)
TRIG	Triglyceride (mg/dl)
URIC	Uric Acid (mg/dl)
TP	Total Protein (g/dl)
ALB	Albumin (g/dl)
GLU	Glucose (mg/dl)
BUN	Blood Urea Nitrogen (mg/dl)
CR	Creatinine (mg/dl)
CAL	Calcium (mg/dl)
PHOS	Phosphorus (mg/dl)
NA	Sodium (Meq/l)
CL	Chloride (Meq/l)
K	Potassium (Meq/l)
IRON	Iron (μ g/dl)
MAG	Magnesium (mg/dl)
NT	Not Taken

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	ACHE	CHE	ALT	AST	ALK	LDH	CK	BILI
86D00512	baseline	0	1.662	0.251	58.7	195.1	196.8	954.7	1606.0	0.00
86D00519	baseline	0	1.496	0.259	48.5	157.7	220.8	999.1	1275.1	0.00
86D00529	baseline	0	1.778	0.438	76.6	99.5	355.9	434.3	621.7	0.00
86D00564	baseline	0	1.129	0.365	50.0	141.1	185.0	799.2	917.8	0.00
86D00637	baseline	0	1.313	0.291	50.9	111.3	287.0	667.2	889.4	0.00
86D00673	baseline	0	1.411	0.446	55.8	110.2	227.5	279.8	593.2	0.00
86D00687	baseline	0	1.314	0.422	66.8	278.1	246.0	763.8	866.8	0.00
86D00702	baseline	0	1.470	0.275	47.5	80.0	314.2	376.9	496.4	0.00
86D00711	baseline	0	NT	NT	NT	NT	NT	NT	NT	NT
86D00714	baseline	0	1.327	0.283	54.4	75.0	258.7	141.2	412.1	0.00
Mean			1.4333	0.3367	56.58	138.67	254.66	601.80	853.17	0.000
Std Dev			0.1967	0.0810	9.61	64.79	55.92	305.44	386.24	0.000

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	CHOL	TRIG	URIC	TP	ALB	GLU	BUN	CR
86D00512	baseline	0	65.8	167.0	2.8	5.4	2.32	196.2	19.0	0.37
86D00519	baseline	0	43.3	74.1	2.2	5.2	2.89	246.0	16.8	0.37
86D00529	baseline	0	77.4	86.0	3.2	5.4	3.02	241.6	15.2	0.56
86D00564	baseline	0	55.9	117.8	2.3	5.1	2.74	248.4	11.7	0.40
86D00637	baseline	0	69.9	71.2	1.4	5.3	2.90	254.9	14.2	0.42
86D00673	baseline	0	55.9	71.5	2.7	4.8	2.74	186.4	13.5	0.42
86D00687	baseline	0	46.1	107.1	2.6	4.7	2.62	241.3	16.6	0.42
86D00702	baseline	0	55.4	62.2	2.3	5.2	2.83	284.9	16.0	0.55
86D00711	baseline	0	NT	NT	NT	NT	NT	NT	NT	NT
86D00714	baseline	0	54.6	71.0	2.5	5.2	2.92	240.8	19.6	0.55
Mean			58.26	91.99	2.44	5.14	2.776	237.83	15.84	0.451
Std Dev			10.97	33.65	0.50	0.25	0.208	29.79	2.53	0.079

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	CAL	PHOS	NA	CL	K	IRON	MAG
86D00512	baseline	0	11.2	9.90	146	103	6.1	341	2.75
86D00519	baseline	0	10.9	9.20	148	100	6.3	337	2.87
86D00529	baseline	0	12.0	11.30	147	101	6.7	343	2.94
86D00564	baseline	0	10.6	9.40	151	101	6.6	276	2.57
86D00637	baseline	0	11.4	9.10	147	103	6.3	174	2.75
86D00673	baseline	0	11.2	9.40	148	104	6.7	356	2.78
86D00687	baseline	0	10.0	9.00	145	105	6.7	454	2.59
86D00702	baseline	0	10.8	10.00	145	98	6.3	170	2.68
86D00711	baseline	0	NT	NT	NT	NT	NT	NT	NT
86D00714	baseline	0	10.7	11.20	140	101	7.4	135	2.58
Mean			10.98	9.83	146.3	101.8	6.50	287.3	2.723
Std Dev			0.56	0.87	3.0	2.2	0.43	106.6	0.131

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	ACHE	CHE	ALT	AST	ALK	LDH	CK	BILI
86D00517	1	180	1.35	0.34	59.5	147.7	113.8	1760.1	867.2	0.0
86D00532	1	180	1.07	0.48	58.9	160.5	132.8	1980.1	1078.2	0.0
86D00538	1	180	1.32	0.64	73.5	182.3	99.0	803.5	1551.1	0.0
86D00558	1	180	1.59	0.31	56.8	129.8	138.2	877.5	628.3	0.0
86D00576	1	180	1.34	0.34	49.9	131.4	73.3	1226.2	1082.4	0.0
86D00578	1	180	1.59	0.43	74.9	144.2	81.7	1284.8	577.9	0.0
86D00579	1	180	1.61	0.54	58.3	120.6	148.5	528.3	265.1	0.0
86D00584	1	180	1.63	0.45	51.3	131.5	99.2	1901.5	820.3	0.0
86D00715	1	180	1.76	0.39	52.0	115.5	110.5	1021.8	464.2	0.0
86D00725	1	180	1.58	0.45	114.0	173.0	246.1	943.3	610.3	0.0
Mean			1.484	0.437	64.91	143.65	124.31	1232.71	794.50	0.00
Std Dev			0.206	0.101	19.25	22.28	49.07	496.83	371.12	0.00
86D00503	2	180	1.27	0.22	82.3	160.1	180.0	1686.3	674.4	0.0
86D00515	2	190	1.24	0.54	43.8	96.3	107.1	796.6	533.2	0.0
86D00549	2	180	1.16	0.22	83.3	144.2	201.0	942.5	593.7	0.0
86D00582	2	180	1.19	0.34	52.2	81.8	102.5	822.9	561.6	0.0
86D00594	2	180	1.27	0.53	62.7	114.0	151.3	584.0	591.1	0.0
86D00610	2	180	1.39	0.36	90.2	135.2	140.1	495.2	353.8	0.0
86D00653	2	180	1.46	0.25	66.8	110.7	63.0	1109.3	665.1	0.0
86D00693	2	180	1.02	0.22	55.6	111.8	58.4	1078.1	563.5	0.0
86D00710	2	180	0.98	0.39	106.0	165.5	190.5	958.5	511.9	0.0
86D00732	2	180	0.77	0.19	51.3	106.8	119.9	632.9	421.9	0.0
Mean			1.175	0.326	69.42	122.64	131.38	910.63	547.02	0.00
Std Dev			0.204	0.129	20.15	27.51	50.26	341.50	99.55	0.00

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	ACHE	CHE	ALT	AST	ALK	LDH	CK	BILI
86D00534	3	180	0.84	0.24	73.0	141.2	93.6	781.5	469.8	0.0
86D00536	3	180	1.06	0.10	56.0	109.5	117.4	1454.0	788.8	0.0
86D00572	3	180	1.01	0.12	67.0	122.8	139.7	728.6	430.1	0.0
86D00603	3	180	0.85	0.20	130.6	201.1	112.8	656.9	389.1	0.0
86D00613	3	180	0.79	0.16	60.0	136.1	131.5	1050.7	834.3	0.0
86D00638	3	180	0.79	0.18	132.6	237.3	77.9	888.5	456.6	0.0
86D00658	3	180	0.73	0.13	60.2	97.9	114.6	882.8	527.3	0.0
86D00662	3	180	0.63	0.16	57.5	90.1	79.5	1052.4	478.4	0.0
86D00671	3	180	0.50	0.15	90.2	170.6	128.2	884.1	475.4	0.0
86D00701	3	180	0.36	0.16	58.0	165.5	72.4	1686.3	1229.7	0.0
Mean			0.756	0.160	78.51	147.21	106.76	1006.58	607.95	0.00
Std Dev			0.214	0.040	29.79	46.87	24.26	326.72	265.18	0.00
86D00516	7	180	1.17	0.37	63.8	100.8	74.7	844.9	470.6	0.0
86D00535	7	180	1.06	0.25	274.1	351.0	85.4	707.6	399.8	0.0
86D00560	7	180	1.22	0.38	58.4	87.0	130.8	348.5	366.7	0.0
86D00569	7	180	0.99	0.24	87.1	224.7	98.2	952.2	1160.2	0.0
86D00597	7	180	0.98	0.39	69.4	126.4	132.6	1193.9	634.6	0.0
86D00616	7	180	1.08	0.34	45.5	98.1	104.1	745.3	486.8	0.0
86D00623	7	180	0.34	0.19	86.0	211.1	81.2	1042.9	619.5	0.0
86D00654	7	180	1.37	0.40	71.3	193.5	137.7	2180.5	1043.9	0.0
86D00660	7	180	1.05	0.25	82.9	161.7	150.3	1355.1	986.6	0.0
86D00729	7	180	0.95	0.23	74.2	134.7	65.6	491.0	632.4	0.0
Mean			1.021	0.304	91.27	168.90	106.06	986.19	680.11	0.00
Std Dev			0.271	0.079	65.52	80.31	29.82	518.27	283.40	0.00

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	CHOL	TRIG	URIC	TP	ALB	GLU	BUN	CR
86D00517	1	180	76.7	147.7	1.9	6.2	3.08	223.7	20.7	0.69
86D00532	1	180	77.4	354.1	2.7	6.5	3.53	242.9	20.4	0.74
86D00538	1	180	81.0	231.4	2.1	6.4	3.17	323.7	18.7	0.74
86D00558	1	180	76.1	135.5	6.4	6.7	3.22	359.2	18.3	0.84
86D00576	1	180	126.0	232.0	2.1	6.5	2.93	305.3	18.1	0.84
86D00578	1	180	71.5	326.4	2.6	6.4	3.16	225.0	18.0	0.59
86D00579	1	180	113.9	273.1	2.8	6.5	3.25	224.7	14.9	0.61
86D00584	1	180	68.6	457.7	2.3	6.8	3.67	234.5	24.9	0.61
86D00715	1	180	67.1	174.2	2.4	6.2	3.02	206.6	16.3	0.57
86D00725	1	180	54.1	187.3	4.8	6.8	3.20	320.4	18.6	0.67
Mean			81.24	251.94	3.01	6.50	3.223	266.60	18.89	0.690
Std Dev			21.92	102.32	1.44	0.22	0.224	54.51	2.71	0.099
86D00503	2	180	65.9	348.6	2.3	6.9	3.39	267.0	18.6	0.67
86D00515	2	180	88.4	284.9	2.8	6.3	3.12	261.1	15.4	0.59
86D00549	2	180	57.8	167.0	2.3	6.4	3.47	230.3	18.8	0.63
86D00582	2	180	75.6	236.3	2.3	6.3	3.00	294.3	15.6	0.60
86D00594	2	180	81.5	156.2	3.0	6.4	3.41	309.3	14.0	0.67
86D00610	2	180	77.4	265.3	2.5	7.3	3.37	231.6	19.3	0.64
86D00653	2	180	102.4	308.7	3.8	5.9	2.84	281.4	16.2	0.64
86D00693	2	180	48.5	209.2	2.1	5.9	2.92	191.5	15.6	0.52
86D00710	2	180	108.7	280.4	2.5	6.7	3.23	197.2	15.5	0.61
86D00732	2	180	60.7	383.7	2.1	6.8	3.32	303.2	18.8	0.68
Mean			76.69	264.03	2.57	6.49	3.207	256.69	16.78	0.625
Std Dev			19.35	73.78	0.52	0.44	0.224	42.42	1.89	0.048

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	CHOL	TRIG	URIC	TP	ALB	GLU	BUN	CR
86D00534	3	180	72.5	290.6	2.3	6.6	2.95	282.5	18.8	0.66
86D00536	3	180	77.5	430.8	2.2	6.4	3.35	291.4	21.5	0.70
86D00572	3	180	101.6	319.1	1.0	6.1	2.89	210.6	20.8	0.66
86D00603	3	180	75.0	207.5	1.5	6.4	3.08	266.7	26.8	0.90
86D00613	3	180	69.1	246.5	3.0	6.7	3.34	231.5	17.0	0.60
86D00638	3	180	100.5	232.7	4.2	6.8	3.45	253.5	17.3	0.64
86D00658	3	180	68.7	189.9	2.2	6.3	2.95	215.1	18.4	0.56
86D00662	3	180	72.7	338.8	1.4	6.3	3.36	198.0	17.8	0.64
86D00671	3	180	56.3	307.5	2.6	6.3	3.14	229.8	18.3	0.67
86D00701	3	180	90.2	242.7	3.3	5.8	3.49	242.8	18.6	0.49
Mean			78.41	280.61	2.37	6.37	3.200	242.19	19.53	0.652
Std Dev			14.59	72.05	0.96	0.29	0.224	31.14	2.92	0.106
86D00516	7	180	66.6	184.5	2.8	6.4	3.31	241.6	16.9	0.74
86D00535	7	180	67.9	150.1	1.2	6.1	3.09	207.2	20.2	0.71
86D00560	7	180	73.1	246.5	6.7	6.8	3.30	393.2	18.1	0.73
86D00569	7	180	101.6	509.0	5.9	6.7	3.30	383.2	19.6	0.75
86D00597	7	180	67.4	96.4	3.8	6.7	3.65	252.2	18.9	0.67
86D00616	7	180	84.8	300.5	0.8	6.2	3.12	235.9	19.6	0.64
86D00623	7	180	99.2	253.8	1.5	6.3	3.07	217.4	14.7	0.67
86D00654	7	180	85.4	152.9	3.3	6.2	3.00	222.4	17.4	0.68
86D00660	7	180	68.5	420.6	3.4	6.5	3.53	223.2	17.7	0.64
86D00729	7	180	76.3	205.6	1.5	5.6	3.15	194.9	19.4	0.65
Mean			79.08	251.99	3.09	6.35	3.252	257.12	18.25	0.688
Std Dev			13.15	128.23	1.99	0.36	0.209	71.04	1.66	0.042

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	CAL	PHOS	NA	CL	K	IRON	MAG
86D00517	1	180	9.9	5.75	148	102	6.9	159	2.38
86D00532	1	180	10.6	6.08	149	102	6.8	171	2.55
86D00538	1	180	10.2	5.32	147	101	6.1	135	2.57
86D00558	1	180	10.8	6.52	148	101	9.4	119	3.56
86D00576	1	180	10.3	6.08	146	100	7.0	118	2.49
86D00578	1	180	9.9	6.71	144	105	5.8	114	2.33
86D00579	1	180	10.4	6.98	143	100	6.2	154	2.31
86D00584	1	180	10.0	5.49	148	104	6.4	168	2.55
86D00715	1	180	10.1	5.23	145	103	5.2	161	2.33
86D00725	1	180	10.3	7.81	145	103	8.3	168	3.29
Mean			10.25	6.197	146.3	102.1	6.81	146.7	2.636
Std Dev			0.30	0.817	2.0	1.7	1.23	22.9	0.432
86D00503	2	180	9.7	5.28	145	104	6.3	176	2.66
86D00515	2	180	10.2	6.13	144	104	6.9	142	2.47
86D00549	2	180	9.9	6.46	146	112	7.1	163	2.58
86D00582	2	180	10.0	5.08	145	103	7.3	147	2.67
86D00594	2	180	10.4	6.14	145	103	6.8	146	2.39
86D00610	2	180	10.2	6.22	145	102	6.0	178	2.44
86D00653	2	180	9.8	7.13	142	103	6.0	149	2.58
86D00693	2	180	9.9	7.32	146	101	5.3	147	2.18
86D00710	2	180	10.4	6.54	145	101	5.7	148	2.44
86D00732	2	180	10.7	6.48	140	100	8.1	2*	2.88
Mean			10.12	6.278	144.3	103.3	6.55	155.1	2.529
Std Dev			0.32	0.702	1.9	3.3	0.84	13.7	0.190

* Value not included in group mean.

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	CAL	PHOS	NA	CL	K	IRON	MAG
86D00534	3	180	9.7	5.68	143	103	6.0	179	2.40
86D00536	3	180	9.9	6.55	145	104	6.0	165	2.48
86D00572	3	180	9.9	4.61	144	103	5.2	141	1.93
86D00603	3	180	9.2	4.98	145	103	5.9	139	2.12
86D00613	3	180	10.0	6.64	145	105	6.5	125	2.54
86D00638	3	180	10.6	7.25	146	103	6.4	181	2.60
86D00658	3	180	9.6	6.12	146	107	5.6	142	2.10
86D00662	3	180	10.1	5.04	145	105	5.2	147	1.98
86D00671	3	180	10.4	7.27	145	104	6.6	193	2.24
86D00701	3	180	10.0	7.74	145	105	6.9	210	2.73
Mean			9.94	6.188	144.9	104.2	6.03	162.2	2.312
Std Dev			0.39	1.084	0.9	1.3	0.58	27.7	0.277
86D00516	7	180	10.2	6.26	149	102	6.7	176	2.75
86D00535	7	180	10.5	7.11	149	106	5.8	153	2.20
86D00560	7	180	11.4	7.70	145	101	9.0	143	3.56
86D00569	7	180	11.3	7.62	147	101	7.6	141	3.36
86D00597	7	180	11.2	8.04	152	104	6.4	129	3.13
86D00616	7	180	10.8	6.27	146	105	6.2	158	2.17
86D00623	7	180	10.8	5.89	151	106	5.3	154	2.44
86D00654	7	180	10.2	6.89	147	103	7.1	134	2.79
86D00660	7	180	11.2	7.54	149	101	7.9	152	2.79
86D00729	7	180	10.6	6.43	148	101	5.3	147	2.33
Mean			10.82	6.975	148.3	103.0	6.73	148.	2.752
Std Dev			0.44	0.738	2.2	2.1	1.19	13.5	0.482

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	ACHE	CHE	ALT	AST	ALK	LDH	CK	BILI
86D00540	1	210	1.44	0.35	54.7	88.6	149.3	224.5	523.1	0.0
86D00585	1	210	1.75	0.27	39.3	73.8	60.8	272.4	301.3	0.0
86D00614	1	210	1.89	0.39	40.5	85.8	66.6	307.7	457.8	0.0
86D00647	1	210	1.49	0.28	50.1	116.9	74.7	1501.0	913.0	0.0
86D00665	1	210	1.10	0.30	45.4	115.5	61.6	1066.6	638.2	0.0
Mean			1.534	0.318	46.00	96.12	82.60	674.44	566.68	0.00
Std Dev			0.305	0.051	6.48	19.16	37.69	577.83	228.71	0.00
86D00559	3A	210	1.41	0.36	67.7	133.0	89.1	934.4	804.7	0.0
86D00571	3A	210	1.61	0.41	50.5	142.5	112.8	2447.8	944.0	0.0
86D00608	3A	210	1.84	0.31	52.6	110.2	94.5	1176.4	976.6	0.0
86D00622	3A	210	1.84	0.27	45.0	108.2	100.4	1312.5	783.3	0.0
86D00651	3A	210	1.94	0.32	52.1	139.0	96.0	1521.8	1113.9	0.0
Mean			1.728	0.334	53.58	126.58	98.56	1478.58	924.50	0.00
Std Dev			0.215	0.053	8.45	16.24	8.93	582.30	135.33	0.00
86D00518	7A	210	1.04	0.40	43.9	125.2	90.0	1538.6	914.0	0.0
86D00524	7A	210	0.80	0.30	58.9	186.7	53.4	1452.9	1060.0	0.0
86D00537	7A	210	1.24	0.27	50.2	137.2	160.2	1722.4	1100.1	0.0
86D00547	7A	210	1.02	0.28	47.4	119.9	106.4	1425.9	701.3	0.0
86D00591	7A	210	0.82	0.45	70.4	142.5	100.5	1272.2	1287.1	0.0
Mean			0.984	0.340	54.16	142.30	102.10	1482.40	1012.50	0.00
Std Dev			0.181	0.080	10.64	26.42	38.45	165.08	219.02	0.00

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	CHOL	TRIG	URIC	TP	ALB	GLU	BUN	CR
86D00540	1	210	67.7	231.5	2.6	5.8	3.24	268.5	14.7	0.70
86D00585	1	210	64.0	106.8	2.6	6.2	3.46	216.6	17.2	0.67
86D00614	1	210	79.3	266.4	0.8	5.8	3.52	222.7	17.0	0.51
86D00647	1	210	78.1	361.1	2.6	6.5	3.23	258.0	15.2	0.71
86D00665	1	210	72.5	207.2	1.3	6.0	3.29	218.7	16.8	0.45
Mean			72.32	234.60	1.98	6.06	3.348	236.90	16.18	0.608
Std Dev			6.57	92.34	0.87	0.30	0.133	24.44	1.15	0.120
86D00559	3A	210	63.6	218.0	4.7	6.3	3.51	242.7	21.1	0.68
86D00571	3A	210	47.6	131.3	2.8	6.1	3.45	229.2	19.6	0.62
86D00608	3A	210	66.3	178.0	3.2	5.8	3.17	242.9	17.0	0.63
86D00622	3A	210	108.4	296.2	2.5	6.2	3.23	243.4	15.8	0.51
86D00651	3A	210	69.2	208.1	1.5	6.5	3.41	204.4	16.2	0.58
Mean			71.02	206.32	2.94	6.18	3.354	232.52	17.94	0.604
Std Dev			22.51	60.51	1.17	0.26	0.147	16.82	2.30	0.063
86D00518	7A	210	70.6	333.3	1.4	6.2	3.23	219.7	17.1	0.35
86D00524	7A	210	93.5	185.0	1.8	6.2	3.37	216.4	17.8	0.79
86D00537	7A	210	66.9	289.6	2.4	6.0	3.51	214.4	17.4	0.65
86D00547	7A	210	70.4	160.7	1.5	6.1	3.39	247.4	15.2	0.66
86D00591	7A	210	90.6	409.5	2.0	5.8	3.20	258.0	15.0	0.29
Mean			78.40	275.62	1.82	6.06	3.340	231.18	16.50	0.548
Std Dev			12.59	103.52	0.40	0.17	0.126	20.09	1.30	0.216

Appendix M (cont.): SERUM CHEMISTRY

Animal	Group	Day	CAL	PHOS	NA	CL	K	IRON	MAG
86D00540	1	210	9.6	5.94	147	101	6.5	103	2.40
86D00585	1	210	10.3	5.52	148	101	7.0	109	2.46
86D00614	1	210	9.8	5.09	148	103	5.7	143	2.01
86D00647	1	210	10.4	5.94	148	99	7.2	107	2.65
86D00665	1	210	10.5	5.22	148	101	5.7	155	2.19
Mean			10.12	5.542	147.8	101.0	6.42	123.4	2.342
Std Dev			0.40	0.395	0.4	1.4	0.70	23.8	0.248
86D00559	3A	210	10.4	5.41	149	100	8.7	201	2.97
86D00571	3A	210	9.8	5.31	149	101	6.7	138	2.61
86D00608	3A	210	9.9	5.95	147	99	8.0	133	2.64
86D00622	3A	210	11.3	5.76	147	100	7.0	130	2.66
86D00651	3A	210	9.8	5.20	149	100	6.6	154	2.54
Mean			10.24	5.526	148.2	100.0	7.40	151.2	2.684
Std Dev			0.64	0.317	1.1	0.7	0.91	29.3	0.166
86D00518	7A	210	10.0	5.32	148	99	6.3	139	2.34
86D00524	7A	210	10.2	5.83	151	99	6.6	149	2.77
86D00537	7A	210	10.3	6.26	148	98	8.4	140	2.95
86D00547	7A	210	10.1	4.75	148	99	6.5	104	2.55
86D00591	7A	210	9.7	5.03	147	99	7.2	169	2.60
Mean			10.06	5.438	148.4	98.8	7.00	140.2	2.642
Std Dev			0.23	0.609	1.5	0.4	0.85	23.6	0.231

Appendix N: HEMATOLOGY

List of Hematology Abbreviations/Units

RBC	Erythrocytes ($\times 10^6/\mu\text{l}$)
HGB	Hemoglobin (g/dl)
HCT	Hematocrit (%)
MCV	Mean Corpuscular Volume (femtoliters)
MCH	Mean Corpuscular Hemoglobin (picograms)
MCHC	Mean Corpuscular Hemoglobin Concentration (g/dl)
PLT	Platelets ($\times 10^3/\mu\text{l}$)
WBC	Total Leukocyte Count ($\times 10^3/\mu\text{l}$)
SEG	Polymorphonuclear Granulocytes (%)
BAN	Immature Neutrophils (%)
EOS	Eosinophils (%)
BAS	Basophils (%)
LYM	Lymphocytes (%)
MON	Monocytes (%)
ATL	Atypical Lymphocytes (%)
NRBC	Nucleated Red Blood Cell (#/100 WBC)
NT	Not Taken

Appendix N (cont.): HEMATOLOGY

Animal	Group	Day	RBC	HGB	HCT	MCV	MCH	MCHC	RET	PLT
86D00512	baseline	0	6.40	14.1	39.3	61	21.9	35.7	0.0	789
86D00519	baseline	0	6.08	13.5	37.3	61	22.1	35.9	0.4	895
86D00529	baseline	0	4.17	8.8	25.3	60	20.9	34.7	0.8	652
86D00564	baseline	0	6.14	14.0	39.0	63	22.7	35.9	0.6	1039
86D00637	baseline	0	6.46	14.5	40.2	62	22.4	36.0	0.6	962
86D00687	baseline	0	5.72	13.1	37.9	60	23.7	35.3	0.0	652
86D00673	baseline	0	6.21	13.4	38.6	59	22.3	34.4	0.2	618
86D00702	baseline	0	6.07	13.4	36.7	60	22.0	36.3	0.8	784
86D00711	baseline	0	5.65	12.8	37.2	63	22.9	34.6	0.4	878
86D00714	baseline	0	6.35	13.9	38.9	61	21.8	35.5	0.2	688
Mean			5.925	13.15	37.04	61.0	22.27	35.43	0.40	795.7
Std Dev			0.672	1.61	4.26	1.3	0.74	0.66	0.30	144.6

Appendix N (cont.): HEMATOLOGY

Animal	Group	Day	WBC	SEG	BAN	EOS	BAS	LYM	MON	ATL	NRBC
86D00512	baseline	0	5.3	10	0	0	0	89	1	0	0
86D00519	baseline	0	2.5	21	0	0	0	79	0	0	0
86D00529	baseline	0	4.2	19	0	1	0	80	0	0	0
86D00564	baseline	0	3.2	9	0	0	0	91	0	0	0
86D00637	baseline	0	6.3	13	0	0	0	87	0	0	0
86D00687	baseline	0	6.0	27	0	0	0	73	0	0	0
86D00673	baseline	0	5.8	27	0	0	0	73	0	0	0
86D00702	baseline	0	6.3	8	0	0	0	91	1	0	0
86D00711	baseline	0	4.9	28	0	0	0	72	0	0	0
86D00714	baseline	0	6.5	8	0	1	0	90	1	0	0
Mean			5.10	17.0	0.0	0.2	0.0	82.5	0.3	0.0	0.0
Std Dev			1.39	8.4	0.0	0.4	0.0	8.0	0.5	0.0	0.0

Appendix N (cont.): HEMATOLOGY

Animal	Group	Day	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
86D00517	1	180	7.96	14.6	40.5	51	18.4	36.1	NT
86D00532	1	180	7.96	15.1	41.7	52	19.0	36.3	NT
86D00538	1	180	8.13	15.1	41.5	51	18.5	36.4	NT
86D00558	1	180	8.51	15.2	43.9	52	17.9	34.5	NT
86D00576	1	180	8.30	14.9	41.8	50	17.9	35.6	NT
86D00578	1	180	7.58	13.9	38.2	50	18.4	36.5	NT
86D00579	1	180	7.71	14.7	39.0	50	19.1	37.7	NT
86D00584	1	180	8.01	14.8	41.2	51	18.5	36.0	NT
86D00715	1	180	6.95	14.6	39.8	50	18.4	36.6	NT
86D00725	1	180	8.31	14.9	40.6	49	17.9	36.7	NT
Mean			7.942	14.78	40.82	50.6	18.40	36.24	NT
Std Dev			0.447	0.37	1.61	1.0	0.42	0.82	NT
86D00503	2	180	4.66	8.6	22.4	47	18.5	38.5	NT
86D00515	2	180	8.37	14.1	43.0	51	16.9	32.9	NT
86D00549	2	180	Insufficient sample						
86D00582	2	180	8.29	15.7	43.2	52	18.9	36.4	NT
86D00594	2	180	Insufficient sample						
86D00610	2	180	8.42	15.6	44.2	52	18.6	35.4	NT
86D00653	2	180	7.35	13.6	37.1	50	18.5	36.7	NT
86D00693	2	180	8.37	15.2	42.1	50	18.4	36.3	NT
86D00710	2	180	8.25	15.3	42.7	52	18.6	35.9	NT
86D00732	2	180	7.61	14.5	39.2	51	19.1	37.0	NT
Mean			7.665	14.08	39.24	50.6	18.44	36.14	NT
Std Dev			1.278	2.33	7.20	1.7	0.66	1.60	NT

Appendix N (cont.): HEMATOLOGY

Animal	Group	Day	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
86D00534	3	180	7.70	14.2	39.3	51	18.5	36.3	NT
86D00536	3	180	8.26	14.5	40.3	49	17.6	36.0	NT
86D00572	3	180	6.91	13.7	38.4	48	17.3	35.6	NT
86D00603	3	180	8.18	14.5	39.0	48	17.8	37.3	NT
86D00613	3	180	8.26	14.9	40.7	49	18.1	36.7	NT
86D00638	3	180	7.97	14.5	39.0	49	18.3	37.2	NT
86D00658	3	180	7.84	14.2	38.5	49	18.1	37.0	NT
86D00662	3	180	8.26	15.5	42.4	51	18.9	36.7	NT
86D00671	3	180	5.25	15.6	42.5	51	18.9	36.7	NT
86D00701	3	180	Clotted						
Mean			7.626	14.62	40.01	49.4	18.17	36.61	NT
Std Dev			0.990	0.62	1.58	1.2	0.55	0.56	NT
86D00516	7	180	8.23	15.0	42.9	52	18.2	34.9	NT
86D00535	7	180	7.91	14.1	39.4	50	17.9	35.9	NT
86D00560	7	180	7.87	14.8	41.5	53	18.9	35.7	NT
86D00569	7	180	8.04	13.7	38.6	48	17.2	35.7	NT
86D00597	7	180	8.84	16.5	45.0	51	18.7	36.8	NT
86D00616	7	180	7.45	14.1	38.6	52	18.9	36.5	NT
86D00623	7	180	7.74	14.2	38.9	50	18.3	36.5	NT
86D00654	7	180	7.89	14.5	39.7	50	18.4	36.6	NT
86D00660	7	180	8.58	15.2	42.1	49	17.7	36.0	NT
86D00729	7	180	Insufficient sample						
Mean			8.061	14.68	40.74	50.6	18.24	36.07	NT
Std Dev			0.429	0.84	2.25	1.6	0.57	0.60	NT

Appendix N (cont.): HEMATOLOGY

Animal	Group	Day	WBC	SEG	BAN	EOS	BAS	LYM	MON	ATL	NRBC
86D00517	1	180	3.3	8	0	0	0	92	0	0	0
86D00532	1	180	7.3	13	0	0	0	87	0	0	0
86D00538	1	180	7.6	13	0	0	0	87	0	0	0
86D00558	1	180	7.8	8	0	0	0	92	0	0	0
86D00576	1	180	8.1	31	0	0	0	67	2	0	0
86D00578	1	180	9.1	25	0	1	0	74	0	0	0
86D00579	1	180	6.9	12	0	0	0	88	0	0	0
86D00584	1	180	7.3	10	0	0	0	90	0	0	0
86D00715	1	180	4.9	9	0	0	0	91	0	0	0
86D00725	1	180	9.4	25	0	2	0	73	0	0	0
Mean			7.17	15.4	0.0	0.3	0.0	84.1	0.2	0.0	0.0
Std Dev			1.84	8.4	0.0	0.7	0.0	9.2	0.6	0.0	0.0
86D00503	2	180	6.4	19	0	0	0	81	0	0	0
86D00515	2	180	9.6	23	0	0	0	77	0	0	0
86D00549	2	180	Insufficient sample								
86D00582	2	180	4.8	22	0	0	0	78	0	0	0
86D00594	2	180	Insufficient sample								
86D00610	2	180	8.1	11	0	0	0	89	0	0	0
86D00653	2	180	4.5	41	0	0	0	59	0	0	0
86D00693	2	180	5.6	28	0	0	0	72	0	0	0
86D00710	2	180	10.2	19	0	2	0	71	0	0	0
86D00732	2	180	8.6	13	0	1	0	86	0	0	0
Mean			7.23	22.0	0.0	0.4	0.0	76.6	0.0	0.0	0.0
Std Dev			2.20	9.4	0.0	0.7	0.0	9.5	0.0	0.0	0.0

Appendix N (cont.): HEMATOLOGY

Animal	Group	Day	WBC	SEG	BAN	EOS	BAS	LYM	MON	ATL	NRBC
86D00534	3	180	10.1	12	0	0	0	88	0	0	0
86D00536	3	180	6.7	8	0	1	0	91	0	0	0
86D00572	3	180	8.4	16	0	1	1	82	0	0	0
86D00603	3	180	5.5	10	0	3	0	87	0	0	0
86D00613	3	180	6.7	10	0	0	0	90	0	0	0
86D00638	3	180	5.2	17	0	0	0	82	1	0	0
86D00658	3	180	6.2	19	0	0	0	81	0	0	0
86D00662	3	180	9.5	9	0	0	0	91	0	0	0
86D00671	3	180	8.3	44	0	1	0	55	0	0	0
86D00701	3	180	Clotted								
Mean			7.40	16.1	0.0	0.7	0.1	83.0	0.1	0.0	0.0
Std Dev			1.75	11.2	0.0	1.0	0.3	11.2	0.3	0.0	0.0
86D00516	7	180	6.2	7	0	0	0	93	0	0	0
86D00535	7	180	9.7	15	0	0	0	85	0	0	0
86D00560	7	180	12.1	21	0	0	0	79	0	0	0
86D00569	7	180	6.0	18	0	0	0	81	1	0	0
86D00597	7	180	4.4	19	0	1	0	80	0	0	0
86D00616	7	180	6.7	13	0	0	0	87	0	0	0
86D00623	7	180	6.9	8	0	2	0	90	0	0	0
86D00654	7	180	4.3	15	0	0	0	85	0	0	0
86D00660	7	180	5.5	7	0	0	0	92	1	0	0
86D00729	7	180	Insufficient sample								
Mean			6.87	13.7	0.0	0.3	0.0	85.8	0.2	0.0	0.0
Std Dev			2.53	5.3	0.0	0.7	0.0	5.2	0.4	0.0	0.0

Appendix N (cont.): HEMATOLOGY

Animal	Group	Day	RBC	HGB	HCT	MCV	MCH	MCHC	PLT
86D00540	1	210	8.06	14.9	40.2	50	18.6	37.1	962
86D00585	1	210	7.54	14.2	38.1	50	18.8	37.2	947
86D00614	1	210	8.01	14.9	40.3	50	18.6	37.0	792
86D00647	1	210	8.41	14.9	40.4	48	17.8	36.9	952
86D00665	1	210	7.97	15.1	41.2	52	19.0	36.7	903
Mean			7.998	14.80	40.04	50.0	18.56	36.98	911.2
Std Dev			0.310	0.35	1.15	1.4	0.46	0.19	70.4
86D00559	3A	210	8.26	15.6	42.2	51	19.0	37.1	795
86D00571	3A	210	8.31	15.2	41.6	50	18.5	36.7	1000
86D00608	3A	210	8.43	15.7	42.1	50	18.7	37.4	774
86D00622	3A	210	8.30	15.1	40.9	49	18.2	36.9	989
86D00651	3A	210	8.65	15.4	41.6	48	17.8	36.9	906
Mean			8.390	15.40	41.68	49.6	18.44	37.00	892.8
Std Dev			0.159	0.25	0.52	1.1	0.46	0.26	105.6
86D00518	7A	210	8.44	14.9	40.0	47	17.6	37.2	1288
86D00524	7A	210	8.02	16.3	44.4	55	20.4	36.8	813
86D00537	7A	210	7.62	14.3	39.1	51	18.8	36.6	872
86D00547	7A	210	6.93	15.2	40.6	51	19.2	37.5	764
86D00591	7A	210	6.96	13.1	34.9	50	18.8	37.6	57
Mean			7.594	14.76	39.80	50.8	18.96	37.14	758.8
Std Dev			0.660	1.18	3.40	2.9	1.00	0.43	443.9

Appendix N (cont.): HEMATOLOGY

Animal	Group	Day	WBC	SEG	BAN	EOS	BAS	LYM	MON	ATL	NRBC
86D00540	1	210	5.8	10	0	1	0	89	0	0	0
86D00585	1	210	5.6	13	0	1	0	86	0	0	0
86D00614	1	210	8.9	14	0	0	0	86	0	0	0
86D00647	1	210	8.2	45	0	0	0	55	0	0	0
86D00665	1	210	8.6	24	0	1	0	75	0	0	0
Mean			7.42	21.2	0.0	0.6	0.0	78.2	0.0	0.0	0.0
Std Dev			1.59	14.3	0.0	0.5	0.0	14.0	0.0	0.0	0.0
86D00559	3A	210	7.9	7	0	1	0	92	0	0	0
86D00571	3A	210	6.5	22	0	1	0	77	0	0	0
86D00608	3A	210	6.2	8	0	0	0	82	0	0	0
86D00622	3A	210	5.2	23	0	2	0	75	0	0	0
86D00651	3A	210	5.4	11	0	0	0	88	1	0	0
Mean			6.24	14.2	0.0	0.8	0.0	82.8	0.2	0.0	0.0
Std Dev			1.07	7.7	0.0	0.8	0.0	7.2	0.4	0.0	0.0
86D00518	7A	210	7.5	35	0	0	0	65	0	0	0
86D00524	7A	210	12.7	9	0	0	0	90	1	0	0
86D00537	7A	210	4.6	27	0	0	0	73	0	0	0
86D00547	7A	210	6.5	17	0	0	0	83	0	0	0
86D00591	7A	210	4.9	16	0	0	0	83	1	0	0
Mean			7.24	20.8	0.0	0.0	0.0	78.8	0.4	0.0	0.0
Std Dev			3.27	10.2	0.0	0.0	0.0	9.8	0.5	0.0	0.0

Appendix O: PATHOLOGY

GLP STUDY # 86005

Pathology Report

Study Director: Don W. Korte, PhD, LTC, MS.

Principal Investigator: Earl W. Morgan, DVM, MAJ, VC.

Pathologist: Charles B. Clifford, DVM, PhD, MAJ, VC.

I. INTRODUCTION

Study: 180 - Day Oral Subchronic Toxicity Test

Test Compound: Pyridostigmine Bromide

Animal: Rattus norvegicus, Sprague-Dawley, 5 weeks, 55 Males.

Dosage Groups:

Group	Daily Dose (mg/kg B.W.)	Sacrifice At 180 Days (Interim Sacrifice)	Recover for 30 Day Sacrifice (Final Sacrifice)
1	0 (Control)	10 males	5 males
2	1	10 males	0 males
3	10	10 males	0 males
7	10 (dose 5 d., recover 2 d.)	10 males	0 males
8	10	0 males	5 males
9	10 (dose 5 d., recover 2 d.)	0 males	5 males

Reference: SOP-OP-STX-74

II. SUMMARY OF PROCEDURES

Euthanasia: Sodium Pentobarbital, IP.

Organ Weights: Brain, Liver, Kidney, Heart, Spleen, Adrenal, and Testes.

Fixative: 10% Neutral Buffered Formalin.

Histopathology: Routine.

III. ORGAN WEIGHT FINDINGS: Summaries of absolute organ weight data by dosage group are presented in Pathology Table 1. Pathology Tables 2 has group summaries of organ weights as a percentage of brain weight. Organ weight as a percentage of body weight was also calculated for each organ and dose group, data not shown. No significant differences were detected by analysis of variance among the dosage groups with respect to organ weight or organ weight ratios.

IV. GROSS FINDINGS: Gross findings are summarized in Pathology Table 3. All gross findings were interpreted as incidental and unrelated to treatment.

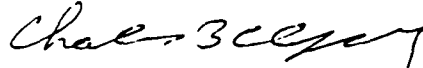
V. MICROSCOPIC FINDINGS: Tissues saved for microscopic examination from all groups were: Accessory sex glands, adrenal glands, aorta, femur, brain, sternum, bone marrow, vertebrae, cecum, colon, diaphragm, duodenum, extensor digitorum longus muscle, epididymis, esophagus, eyes with optic nerve, heart, ileum, jejunum, kidney, lacrimal gland, liver, lung, mesenteric lymph node, nose/turbinates, pancreas, pituitary, parathyroid gland, spinal cord, salivary gland, skin, skeletal muscle, sciatic nerve, soleus muscle, spleen, stomach, thyroid gland, testis, thymus, trachea, and urinary bladder. All tissues from all animals were examined in each dose group. All gross lesions were examined from all animals. Due to concern of extraocular muscles as a potential target tissue for pyridostigmine bromide, extraocular muscle was also examined in all eye sections where it was present, and was recorded as a separate, miscellaneous, tissue.

Pathology Tables 4 and 5 list the incidence summary for all microscopic observations of all tissues from the final and interim sacrifices. Based on results of Kolmogorov-Smirnov two-tailed analysis (95% confidence level) of microscopic findings, two of thirty-six lesions were significantly more frequent in a treated group than in the control group. Chronic, multifocal hepatic inflammation, slight to mild in severity, occurred more frequently in Dose Group 3 (interim sacrifice), and brown pigment, probably hemosiderin, in macrophages was more frequently observed in the spleens of rats in Group 9 (final sacrifice). Neither of the findings was unique to treated animals and their

Appendix O (cont.): PATHOLOGY

increased frequency was considered unlikely to be related to treatment. Inflammation of the pancreas, varying from slight to moderate in severity, was observed in animals from all groups. Islets of Langerhans were surrounded by this chronic process and appeared increased in size, but actual destruction of the Islets was not observed. The cause of the pancreatic inflammation was not determined. Pathology Annex A has the correlation of gross and microscopic lesions for all rats, with any gross finding other than "No Lesions Recognized". Pathology Annex B contains the Individual Animal Reports with organ weight data and gross and microscopic findings.

VI. SUMMARY COMMENTS: All lesions observed in these rats were interpreted as incidental findings. No morphologic evidence of toxicity due to the test compound was found.



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29 MAY 1990

Appendix O (cont.): PATHOLOGY

Glossary of Microscopic Findings

Cecum

--Granuloma(s), Submucosa: One or more aggregates of macrophages and lymphocytes is present in the submucosa.

Cervical Lymph Node

--Plasmacytosis, Medullary: The medullary cords are thickened by an increased number of plasma cells.

Colon

--Granuloma(s), Submucosa: One or more aggregates of macrophages and lymphocytes is present in the submucosa.

Diaphragm

--Inflammation and Myofiber Degeneration, Chronic: The interstitium is infiltrated by lymphocytes and macrophages. Some myofibers are infiltrated by mononuclear cells and have degenerate sarcoplasm.

Epididymis

--Lymphocyte Infiltration: The interstitial connective tissue contains aggregates of lymphocytes.

--Microcystic Change, Epithelium: The epithelium of the epididymis contains numerous round clear spaces, approximately the diameter of the epithelial cells, and which appear to be extracellular.

Extensor Digitorum Longus

--Inflammation, Chronic: The interstitium is infiltrated by lymphocytes and macrophages.

Extraocular Muscles

--Myopathic Change: Myofibers are variably decreased in diameter, with central nuclei. The fibrous connective tissue between fibers contains an infiltrate of mononuclear cells.

Heart

--Chronic Myofiber Degeneration: In one or more areas myofibers are narrowed with loss of sarcoplasm, and are separated by increased fibrous connective tissue. Myofiber nuclei are increased in number, and Anitschkow cells may be present.

--Inflammation, Chronic: Myocardial interstitial tissue is infiltrated by lymphocytes and a few macrophages. Fibrosis may be present.

Kidney

--Cortical Lymphocytic Aggregates: Self-explanatory.

--Dilated Renal Pelvis: Self-explanatory.

--Infarct: A well-demarcated wedge-shaped area of the cortex is undergoing coagulative necrosis.

--Mineralization, Pelvis: Foci of mineral are present in the urinary pelvis of the urinary space.

Appendix O (cont.): PATHOLOGY

--Progressive Renal Disease: Cortical tubules contain homogeneous, brightly eosinophilic material. Small interstitial aggregates of lymphocytes are occasionally present.

--Pyelonephritis, Acute: The epithelium, subjacent tissue and the urinary space of the renal pelvis are infiltrated with neutrophils.

Lacrimal Gland

--Inflammation, Chronic: Interstitial aggregates of macrophages, lymphocytes and/or plasma cells surround ducts, ductules and occasional acini.

Liver

--Arteritis, Chronic: The wall of one or more arteries in a portal area is thickened by fibrosis and an infiltration of mononuclear cells. The endothelium may be hypertrophic and/or hyperplastic.

--Inflammation, Chronic, Multifocal: Multifocal infiltration of sinusoids and/or portal areas with a mixed population of mononuclear cells. Some fibrosis and/or slight bile duct hyperplasia may be present in these foci.

--Necrosis, Acute: One or more contiguous group(s) of necrotic hepatocytes. These may be infiltrated by neutrophils.

--Telangiectasis: Hepatic sinusoids are dilated, with narrowing of the hepatic cords and loss of some hepatocytes.

--Thrombosis, Portal Vein: An acute fibrin thrombus is present in one of the larger portal veins.

--Vacuolization, Focal: Hepatocytes in a single contiguous group contain numerous, irregular and poorly defined clear vacuoles.

Lungs

--Alveolar Histiocytosis: Self-explanatory.

--Granuloma(s): A focal aggregate of macrophages and lymphocytes, with or without multinucleated giant cells.

--Hyperplasia, BAL: Bronchus- and Bronchiole-associated lymphoid tissue, in the form of lymphoid nodules is slightly increased in prominence.

Mesentery

--Arteritis, Chronic: The wall of one or more arteries in a portal area is thickened by fibrosis and an infiltration of mononuclear cells. The endothelium may be hypertrophic and/or hyperplastic.

--Inflammation, Granulomatous: The intestinal mesentery contains aggregates of macrophages and lymphocytes.

Pancreas

--Inflammation, Chronic: Interstitial fibrosis infiltration is accompanied by aggregates of macrophages, lymphocytes and/or plasma cells. Interstitial macrophages contain brown pigment. The inflammation is predominantly surrounding ducts and islets of Langerhans.

Pancreatic Lymph Node

--Brown Pigment in Macrophages: Macrophages in the Medulla are laden with dark brown isotropic pigment, probably hemosiderin.

Appendix O (cont.): PATHOLOGY

Pituitary Gland

--Cyst(s), Pars Distalis: The cyst(s) may be ciliated or non-ciliated.

Preputial Gland

--Inflammation, Chronic: Glandular acini and the interstitial connective tissue is infiltrated by lymphocytes, macrophages and neutrophils.

Salivary Gland

--Inflammation, Chronic: Interstitial aggregates of macrophages, lymphocytes and/or plasma cells surround ducts, ductules and occasional acini, predominantly in the exorbital salivary gland.

Skin

--Inflammation, Chronic: The dermis is infiltrated with lymphocytes, plasma cells, and macrophages.

Soleus Muscle

--Inflammation, Chronic: The interstitium is infiltrated by lymphocytes and macrophages.

Spleen

--Increased Brown Pigment in Macrophages: Self-explanatory.

Testis

--Degeneration, Seminiferous Tubules: Loss of germinal epithelium, with local aspermatogenesis. Sertoli cells remain.

Thyroid

-Cyst(s): Squamous epithelial-lined cyst.

Turbinates

--Inflammation, Lymphocytic: The submucosa is thickened, and along with the mucosal epithelium is infiltrated with lymphocytes. Mast cells are prominent.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Group Comparison Statistics for Absolute Organ Weights (gms) PRINTED: 14-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 1
 PRESIDIO OF SAN FRANCISCO, CA 94129 Report includes all dead animals (All subgroups)
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Organ: LIVER	Male Animals									
	Controls from group: 1		Data homogeneous by Bartlett's test (Dunnnett's T test)							
Group	Control	2	3	7	8	9				
Number/group	15	10	10	10	5	5				
Mean	21.8	23.0	22.5	20.5	19.0	20.8				
Standard deviation	3.8	3.0	2.3	2.8	2.7	3.1				
Group diff. @ P=.05		3.3	3.3	3.3	4.2	4.2				
Group diff. @ P=.01		4.1	4.1	4.1	5.2	5.2				

Analysis of variance: F ratio = 1.57 Df = 5/ 49 F probability = 0.185

Note: a * indicates group mean is significantly different from control at level of significance shown.

Organ: KIDNEY	Male Animals									
	Controls from group: 1		Data homogeneous by Bartlett's test (Dunnnett's T test)							
Group	Control	2	3	7	8	9				
Number/group	15	10	10	10	5	5				
Mean	3.7	4.1	3.7	3.8	3.5	3.7				
Standard deviation	0.4	0.4	0.3	0.5	0.2	0.8				
Group diff. @ P=.05		0.5	0.5	0.5	0.6	0.6				
Group diff. @ P=.01		0.6	0.6	0.6	0.7	0.7				

Analysis of variance: F ratio = 1.57 Df = 5/ 49 F probability = 0.185

Note: a * indicates group mean is significantly different from control at level of significance shown.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Group Comparison Statistics for Absolute Organ Weights (gms) PRINTED: 14-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 2
 PRESIDIO OF SAN FRANCISCO, CA 94129 Report includes all dead animals (All subgroups)
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Organ: HEART	Controls from group: 1		Male Animals					
			Data homogeneous by Bartlett's test (Dunnnett's T test)					
	Group	2	3	7	8	9		
	Number/group	15	10	10	5	5		
	Mean	1.7	1.7	1.8	1.6	1.7		
	Standard deviation	0.2	0.2	0.3	0.1	0.2		
	Group diff.@ P=.05	0.2	0.2	0.2	0.3	0.3		
	Group diff.@ P=.01	0.3	0.3	0.3	0.4	0.4		

Analysis of variance: F ratio = 0.86 Df = 5/ 49 F probability = 0.517
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Organ: BRAIN	Controls from group: 1		Male Animals					
			Data homogeneous by Bartlett's test (Dunnnett's T test)					
	Group	2	3	7	8	9		
	Number/group	15	10	10	5	5		
	Mean	2.	2.	2.	2.	2.		
	Standard deviation	0.	0.	0.	0.	0.		
	Group diff.@ P=.05	0.	0.	0.	0.	0.		
	Group diff.@ P=.01	0.	0.	0.	0.	0.		

Analysis of variance: F ratio = 1.05 Df = 5/ 49 F probability = 0.402
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Group Comparison Statistics for Absolute Organ Weights (gms) PRINTED: 14-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 3
 PRESIDIO OF SAN FRANCISCO, CA 94129 Report includes all dead animals (All subgroups)
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Organ: ADRENAL GLANDS Controls from group: 1 Male Animals
 Data homogeneous by Bartlett's test (Dunnnett's T test)

Group	2	3	7	8	9
Number/group	10	10	10	5	5
Mean	0.07	0.06	0.06	0.07	0.06
Standard deviation	0.02	0.02	0.02	0.01	0.01
Group diff. @ P=.05	0.02	0.02	0.02	0.02	0.02
Group diff. @ P=.01	0.02	0.02	0.02	0.02	0.02

Analysis of variance: F ratio = 1.32 Df = 5/ 49 F probability = 0.272
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Organ: TESTIS Controls from group: 1 Male Animals
 Data nonhomogeneous by Bartlett's test (modified T test)

Group	2	3	7	8	9
Number/group	10	10	10	5	5
Mean	3.58	3.40	3.46	2.89	3.0
Standard deviation	0.24	0.43	0.29	1.21	0.41
Group diff. @ P=.05	0.27	0.37	0.30	1.52	0.5
Group diff. @ P=.01	0.38	0.53	0.42	2.52	0.65

Analysis of variance: F ratio = 1.52 Df = 5/ 49 F probability = 0.201
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Group Comparison Statistics for Absolute Organ Weights (gms) PRINTED: 14-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 4
 PRESIDIO OF SAN FRANCISCO, CA 94129 Report includes all dead animals (All subgroups)
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Organ: SPLEEN	Controls from group: 1		Male Animals		Data homogeneous by Bartlett's test (Dunnnett's T test)	
	Group	Number/group	2	3	7	8
	Control	15	10	10	10	5
		1.	1.	1.	1.	1.
		0.	0.	0.	0.	0.
Standard deviation			0.	0.	0.	0.
Group diff. @ P=.05			0.	0.	0.	0.
Group diff. @ P=.01			0.	0.	0.	0.

Analysis of variance: F ratio = 2.10 Df = 5/ 49 F probability = 0.080
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Group Comparison Statistics for % Organ to Brain Weight Ratio PRINTED: 14-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 1
 PRESIDIO OF SAN FRANCISCO, CA 94129 Report includes all dead animals (All subgroups)
 RAT/SPR/UP-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Organ: LIVER	Controls from group: 1	Male Animals				
		Data homogeneous by Bartlett's test (Dunnnett's T test)				
Group	2	3	7	8	9	
Number/group	15	10	10	5	5	
Mean	1026.	1044.	978.	874.	992.	
Standard deviation	184.	136.	128.	129.	145.	
Group diff. @ P=.05		157.	157.	199.	199.	
Group diff. @ P=.01		195.	195.	246.	246.	

Analysis of variance: F ratio = 1.65 Df = 5/ 49 F probability = 0.164
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Organ: KIDNEY	Controls from group: 1	Male Animals				
		Data homogeneous by Bartlett's test (Dunnnett's T test)				
Group	2	3	7	8	9	
Number/group	15	10	10	5	5	
Mean	174.	186.	179.	161.	176.	
Standard deviation	22.	18.	27.	9.	37.	
Group diff. @ P=.05		24.	24.	30.	30.	
Group diff. @ P=.01		29.	29.	37.	37.	

Analysis of variance: F ratio = 0.93 Df = 5/ 49 F probability = 0.469
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Group Comparison Statistics for Organ to Brain Weight Ratio PRINTED: 14-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 2
 PRESIDIO OF SAN FRANCISCO, CA 94129 Report includes all dead animals (All subgroups)
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Organ: HEART	Controls from group: 1		Male Animals				
			Data homogeneous by Bartlett's test (Dunnett's T test)				
	Control	2	3	7	8	9	
Number/group	15	10	10	10	5	5	
Mean	82.	82.	83.	86.	73.	83.	
Standard deviation	9.	7.	13.	17.	8.	12.	
Group diff.@ P=.05		12.	12.	12.	15.	15.	
Group diff.@ P=.01		15.	15.	15.	19.	19.	

Analysis of variance: F ratio = 0.99 Df = 5/ 49 F probability = 0.434

Note: a * indicates group mean is significantly different from control at level of significance shown.

Organ: BRAIN	Controls from group: 1		Male Animals				
			Data homogeneous by Bartlett's test (Dunnett's T test)				
	2	3	7	8	9		
Group	Control						
Number/group	15	10	10	5	5		
Mean	100.	100.	100.	100.	100.		
Standard deviation	0.	0.	0.	0.	0.		
Group diff.@ P=.05	0.	0.	0.	0.	0.		
Group diff.@ P=.01	0.	0.	0.	0.	0.		

Analysis of variance: F ratio = 0.00 Df = 5/ 49 F probability = 1.000

Note: a * indicates group mean is significantly different from control at level of significance shown.

PATHOLOGY TABLE 2 (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Group Comparison Statistics for % Organ to Brain Weight Ratio PRINTED: 14-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 3
 PRESIDIO OF SAN FRANCISCO, CA 94129 Report includes all dead animals (All subgroups)
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Organ: ADRENAL GLANDS Controls from group: 1 Male Animals Data nonhomogeneous by Bartlett's test (modified T test)

Group	2	3	7	8	9
Number/group	15	10	10	5	5
Mean	3.0	3.1	2.7	3.1	2.9
Standard deviation	0.6	0.8	0.9	0.3	0.2
Group diff. @ P=.05		0.7	0.7	0.5	0.4
Group diff. @ P=.01		0.9	1.0	0.8	0.6

Analysis of variance: F ratio = 0.92 Df = 5/ 49 F probability = 0.480
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Organ: TESTIS Controls from group: 1 Male Animals Data nonhomogeneous by Bartlett's test (modified T test)

Group	2	3	7	8	9
Number/group	15	10	10	5	5
Mean	164.4	162.8	165.1	132.2	166.7
Standard deviation	14.3	8.4	27.8	12.4	55.1
Group diff. @ P=.05		9.9	21.4	11.9	69.0
Group diff. @ P=.01		14.0	30.6	114.6	34.4

Analysis of variance: F ratio = 1.90 Df = 5/ 49 F probability = 0.111
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Group Comparison Statistics for % Organ to Brain Weight Ratio
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005
 PRESIDIO OF SAN FRANCISCO, CA 94129 Report includes all dead animals (All subgroups)
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

PRINTED: 14-May-90
 Page: 4

Organ: SPLEEN	Controls from group: 1	Male Animals							
		Data homogeneous by Bartlett's test (Dunnett's T test)							
Group	Control	2	3	7	8	9			
Number/group	15	10	10	10	5	5			
Mean	43.	46.	45.	41.	36.	37.			
Standard deviation	7.	7.	9.	10.	2.	11.			
Group diff. @ P=.05		8.	8.	8.	11.	11.			
Group diff. @ P=.01		10.	10.	10.	13.	13.			

Analysis of variance: F ratio = 1.82 Df = 5/ 49 F probability = 0.126
 Note: a * indicates group mean is significantly different from control at level of significance shown.

Appendix O (cont.): PATHOLOGY

	Incidence Summary Report for Gross Necropsy Observations										PRINTED: 14-May-90	
	Study Number: 86005										Page: 1	
	Report includes all dead animals										SUBCHRONIC/180 DAY FEEDING	
	Study Start Date: 10-Dec-86											
	-- Males --											
	Ctl's	2	3	7	8	9						
	15	10	10	10	5	5						
KIDNEY												
DILATED RENAL PELVIS	0	0	0	0	0	1	0					
CYST(S)	0	0	0	0	0	0	1					
LIVER												
ENLARGED	0	0	1	1	1	1	0					
ABNORMAL PIGMENTATION	0	0	1	0	1	0	0					
CONGESTED	0	0	0	1	0	0	0					
LYMPH NODES												
ENLARGED	1	0	0	0	0	0	0					
SKIN												
ALOPECIA	0	0	1	0	0	0	0					
SPLEEN												
ENLARGED (SPLENOMEGALY)	0	1	0	0	0	0	0					
NODULAR SURFACE	0	0	0	1	0	0	0					
TESTIS												
ATROPHIC/SMALL, UNILATERALLY ...	0	0	1	0	0	0	0					
ATROPHIC/SMALL, BILATERALLY	0	0	0	0	0	1	0					
WHOLE BODY												
NO LESIONS RECOGNIZED	14	9	8	9	3	4						

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Incidence Summary of Microscopic Observations Study Number: 86005 All Diagnoses Study Start Date: 10-Dec-86		PRINTED: 15-May-90 Page: 1	
Notes: Animals = Interim sacrifice 1 Controls from group(s): 1		SUBCHRONIC/180 DAY FEEDING			
Tissues With Diagnoses		-- Animals Affected --			
		Animal sex: Dosage group: Ctls		Males	
		No. in group:		2 3 7	
				10 10 10	
ADRENAL GLANDS		Number examined:		9 10 10 9	
AORTA		Number examined:		9 8 10 10	
BONE, FEMUR		Number examined:		8 7 9 9	
BONE MARROW		Number examined:		10 9 9 10	
BRAIN		Number examined:		10 10 10 10	
BONE, STERNUM		Number examined:		10 8 9 10	
BONE, VERTEBRAE		Number examined:		10 7 9 10	
CECUM		Number examined:		10 10 10 10	
GRANULOMA(S), SUBMUCOSA		Number examined:		0 0 0 1	
CERVICAL LYMPH N		Number examined:		8 3 2 5	
PLASMACYTOSIS, MEDULLARY		Number examined:		4 3 2 4	
COLON		Number examined:		10 10 10 10	
GRANULOMA(S), SUBMUCOSA		Number examined:		0 1 2 0	
DIAPHRAGM		Number examined:		10 10 10 10	
INFLAMMATION AND MYOFIBER DEGENERATION, CHRONIC		Number examined:		0 0 1 0	
DUODENUM		Number examined:		10 10 10 10	

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

PATHOLOGY TABLE 4 (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Incidence Summary of Microscopic Observations Study Number: 86005 All Diagnoses Study Start Date: 10-Dec-86		PRINTED: 15-May-90 Page: 3	
Notes: Animals = interim sacrifice) Controls from group(s): 1		SUBCHRONIC/180 DAY FEEDING			
T i s s u e s W i t h D i a g n o s e s		-- A n i m a l s A f f e c t e d --			
		Ctls 2 3 7			
		10 10 10 10			
LACRIMAL GLAND		10 9 10 10			
INFLAMMATION, CHRONIC		0 0 1 1			
LIVER		10 10 10 10			
VACUOLIZATION, FOCAL		1 0 0 1			
INFLAMMATION, CHRONIC, MULTIFOCAL		3 3 -9 4			
NECROSIS, ACUTE		1 1 2 1			
THROMBOSIS, PORTAL VEIN		0 0 1 0			
ARTERITIS, CHRONIC		1 1 1 1			
TELANGIECTASIS		0 0 0 0			
LUNGS		10 10 10 10			
HYPERPLASIA, BALT		2 0 2 1			
GRANULOMA(S)		0 0 1 0			
ALVEOLAR HISTIOCYTOSIS		0 0 1 0			
MIDDLE EAR (S)		5 5 6 7			
MESENTERY		0 1 1 1			
INFLAMMATION, GRANULOMATOUS		0 0 1 1			
ARTERITIS, CHRONIC		0 1 0 1			
MAMMARY GLAND		6 7 5 4			
MESENT LYMPH NOD		7 10 10 10			
PANCREAS		10 10 10 10			
INFLAMMATION, CHRONIC		5 7 5 4			

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

PATHOLOGY TABLE 4 (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH			Incidence Summary of Microscopic Observations			PRINTED: 15-May-90		
DIV OF RES SUPP, PATH SERV GP			Study Number: 86005			Page: 4		
PRESIDIO OF SAN FRANCISCO, CA 94129			All Diagnoses			SUBCHRONIC/180 DAY FEEDING		
RAT/SPRAGUE-DAWLEY			Study Start Date: 10-Dec-86					
Notes: Animals = Interim sacrifice 1			-- Animals Affected --					
Controls from group(s): 1			-- Males --					
			Ctl's			7		
			10			10		
Tissues With Diagnoses			No. in group:			10		
PITUITARY GLAND			Number examined:			9 8 10 8		
CYST(S), PARS DISTALIS						1 0 1 0		
PREPUTIAL GLAND			Number examined:			1 2 0 1		
INFLAMMATION, CHRONIC						1 1 0 1		
PANCREATIC LN			Number examined:			0 0 0 1		
BROWN PIGMENT IN MACROPHAGES						0 0 0 0		
ROSTATE			Number examined:			10 9 10 10		
PARATHYROID			Number examined:			6 8 6 8		
RECTUM			Number examined:			3 10 3 5		
SPINAL CORD			Number examined:			10 7 9 10		
SALIVARY GLAND			Number examined:			10 10 10 10		
INFLAMMATION, CHRONIC						6 7 8 7		
SKIN			Number examined:			10 10 10 10		
INFLAMMATION, CHRONIC						0 0 1 0		
SKELETAL MUSCLE			Number examined:			10 7 9 10		
SCIATIC NERVE			Number examined:			10 7 9 10		
SOLEUS MUSCLE			Number examined:			10 10 10 10		
INFLAMMATION, CHRONIC						0 0 0 1		
Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.								

PATHOLOGY TABLE 4 (cont.)

PRINTED: 15-May-90
Page: 5

All Diagnoses

Study Start Date: 10-Dec-86

SUBCHRONIC/180 DAY FEEDING

--- Animals Affected ---

--- Males ---

cls 10

9

91

10

10

10

102

8

10

95

9

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Incidence Summary of Microscopic Observations Study Number: 86005 All Diagnoses Study Start Date: 10-Dec-86		PRINTED: 15-May-90 Page: 6	
Notes: Animals = final sacrifice only Controls from group(s): 1		SUBCHRONIC/180 DAY FEEDING			
Tissues With Diagnoses		-- Animals Affected --			
		-- Males --			
		Ct/s			
ADRENAL GLANDS		5	5	5	5
AORTA		5	5	5	5
BONE, FEMUR		4	4	5	5
BONE MARROW		5	5	5	5
BRAIN		5	5	5	5
BONE, STERNUM		5	5	5	5
BONE, VERTEBRAE		5	5	5	5
CECUM		5	5	5	5
GRANULOMA(S), SUBMUCOSA		0	0	0	0
CERVICAL LYMPH N		3	3	3	3
PLASMACYTOSIS, MEDULLARY		1	1	2	2
COLON		5	5	5	5
GRANULOMA(S), SUBMUCOSA		0	0	0	0
DIAPHRAGM		5	5	5	5
INFLAMMATION AND MYOFIBER DEGENERATION, CHRONIC		0	0	0	0
DUODENUM		5	5	5	5

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Incidence Summary of Microscopic Observations Study Number: 86005 All Diagnoses Study Start Date: 10-Dec-86		PRINTED: 15-May-90 Page: 7	
Notes: Animals = final sacrifice only Controls from group(s): 1		-- Animals --		SUBCHRONIC/180 DAY FEEDING	
Tissues With Diagnoses		-- Males --			
		Ctls	8	9	
		5	5	5	
EXTEN DIG LONG M		5	5	5	
INFLAMMATION, CHRONIC		0	0	0	
EXTRA-ACULAR MM		5	5	5	
MYOPATHIC CHANGE		0	1	0	
EPIDIDYMUS		5	5	5	
MICROCYSTIC CHANGE, EPITHELIUM		1	0	2	
LYMPHOCYTE INFILTRATION		1	0	0	
ESOPHAGUS		5	5	5	
EYES & OPTIC N.		5	5	4	
HEART		5	5	5	
INFLAMMATION, CHRONIC		4	1	0	
CHRONIC MYOFIBER DEGENERATION		1	0	1	
ILEUM		5	5	5	
JEJUNUM		4	5	5	
KIDNEY		5	5	5	
CORTICAL LYMPHOCYTE AGGREGATES		3	2	0	
PROGRESSIVE RENAL DISEASE		0	2	3	
PYELONEPHRITIS, ACUTE		0	0	0	
INFARCT		0	0	0	
MINERALIZATION, PELVIS		0	0	2	
DILATED RENAL PELVIS		0	1	0	

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Incidence Summary of Microscopic Observations Study Number: 86005 All Diagnoses Study Start Date: 10-Dec-86		PRINTED: 15-May-90 Page: 8	
Notes: Animals = final sacrifice only Controls from group(s): 1		SUBCHRONIC/180 DAY FEEDING			
Tissues With Diagnoses		-- Animals --		Affected --	
		-- Males --			
		Ctls			
		5 5 5		8 9 5	
		No. in group:			
		Number examined:			
LACRIMAL GLAND		5		5	
INFLAMMATION, CHRONIC		1		0	
LIVER		5		5	
VACUOLIZATION, FOCAL		0		0	
INFLAMMATION, CHRONIC, MULTIFOCAL		2		3	
NECROSIS, ACUTE		0		0	
THROMBOSIS, PORTAL VEIN		0		0	
ARTERITIS, CHRONIC		0		0	
TELANGIECTASIS		1		0	
LUNGS		5		5	
HYPERPLASIA, BALT		0		0	
GRANULOMA(S)		0		0	
ALVEOLAR HISTIOCYTOSIS		0		0	
MIDDLE EAR(S)		2		2	
MESENTERY		0		0	
MAMMARY GLAND		5		3	
MESENT LYMPH NOD		5		4	
PANCREAS		5		5	
INFLAMMATION, CHRONIC		4		4	
PITUITARY GLAND		5		5	
CYST(S), PARS DISTALIS		1		1	

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Incidence Summary of Microscopic Observations Study Number: 86005 All Diagnoses Study Start Date: 10-Dec-86		PRINTED: 15-May-90 Page: 9 SUBCHRONIC/180 DAY FEEDING	
Notes: Animals = final sacrifice only Controls from group(s): 1		Animal sex: Dosage group: No. in group:		-- Animals Affected -- -- Males -- CtIs 8 9 5 5 5	
Tissues With Diagnoses		Number examined:			
PREPUTIAL GLAND		1		0	
INFLAMMATION, CHRONIC		1		0	
PANCREATIC LN		0		0	
BROWN PIGMENT IN MACROPHAGES		0		0	
PROSTATE		5		5	
PARATHYROID		3		4	
RECTUM		3		4	
SPINAL CORD		5		5	
SALIVARY GLAND		5		5	
INFLAMMATION, CHRONIC		4		3	
SKIN		5		5	
INFLAMMATION, CHRONIC		0		0	
SKELETAL MUSCLE		4		4	
SCIATIC NERVE		4		4	
SOLEUS MUSCLE		5		5	
INFLAMMATION, CHRONIC		0		0	
SPLEEN		5		5	
INCREASED BROWN PIGMENT IN MACROPHAGES		2		2	
STOMACH		5		5	

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

PATHOLOGY TABLE 5 (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Incidence Summary of Microscopic Observations Study Number: 86005 All Diagnoses Study Start Date: 10-Dec-86		PRINTED: 15-May-90 Page: 10	
Notes: Animals = final sacrifice only Controls from group(s): 1		SUBCHRONIC/180 DAY FEEDING			
Tissues With Diagnoses		-- Animals Affected --			
		-- Males --			
		Ctls			
		5		8	
		5		9	
		5		5	
TESTIS		Number examined:			
DEGENERATION, SEMINIFEROUS EPITHELIUM		5		5	
THYROID GLAND		1		1	
CYST(S)		5		5	
THYMUS		1		3	
TRACHEA		4		5	
TURBINATES		5		5	
INFLAMMATION, LYMPHOCYTIC		5		5	
URINARY BLADDER		3		0	
		5		5	

Note: Entries flagged with a - (minus) are significantly different from control at the 0.05 level using the Kolmogorov-Smirnov two tailed test.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Individual animal report of correlated gross and microscopic diagnoses PRINTED: 29-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 1
 PRESIDIO OF SAN FRANCISCO, CA 94129 Tissues With Gross Observations Only
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86D00576 Sex: Male Group: 1 Dose level: Control
 Day of death: 147 Status: Interim sacrifice 1 Terminal body weight (kms): 0.74

Tissue Gross observations / Comments Correlated microscopic observations

CERVICAL LYMPH N . . . ENLARGED, Moderate/ BOTH ARE 1 CM IN DIAMETER PLASMACYTOSIS, marked

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Individual animal report of correlated gross and microscopic diagnoses
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 PRINTED: 15-May-90
 PRESIDIO OF SAN FRANCISCO, CA 94129 Tissues With Gross Observations Only Page: 2
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000732 Sex: Male Group: 2 Dose level: 1 (MG/KG)
 Day of death: 149 Status: Interim sacrifice 1 Terminal body weight (kms): 0.70

Tissue Gross observations / Comments Correlated microscopic observations

SPLEEN ENLARGED (SPLENOMEGALY), Moderate INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Individual animal report of correlated gross and microscopic diagnoses PRINTED: 15-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 8600534 Page: 3
 PRESIDIO OF SAN FRANCISCO, CA 94129 Tissues With Gross Observations Only
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 8600534	Sex: Male	Group: 3	Dose level: 10 (MG/KG)/day
Day of death: 149	Status: Interim sacrifice 1	Terminal body weight (kms): 0.68	
Tissue	Gross observations / Comments	Correlated microscopic observations	
SKIN	ALOPECIA, Trace/ A ICM ABRASION IS PRESENT IN THE VENTRAL ABDOMINAL REGION.	INFLAMMATION, CHRONIC, Moderate, Focal.	
TESTIS	ATROPHIC/SMALL, UNILATERALLY, Moderate/ THE LEFT TESTIS IS ABOUT HALF THE SIZE OF THE RIGHT TESTIS.	DEGENERATION, SEMINIFEROUS EPITHELIUM, Marked, Diffuse.	

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Individual animal report of correlated gross and microscopic diagnoses
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 PRINTED: 15-May-90
 PRESIDIO OF SAN FRANCISCO, CA 94129 Tissues With Gross Observations Only Page: 4
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000572 Sex: Male Group: 3
 Day of death: 149 Status: Interim sacrifice 1 Terminal body weight (kms): 0.59 Dose level: 10 (MG/KG)/day

Tissue Gross observations / Comments Correlated microscopic observations

LIVER ENLARGED, MILD/ EDGES WERE ALSO ROUNDED. INFLAMMATION, CHRONIC, MULTIFOCAL, SLIGHT, MULTIFOCAL.

ABNORMAL PIGMENTATION, MILD/ CENTRAL PALLOR, MARKEDLY No correlated microscopic observation
 ACCENTUATED ARCHITECTURE

Pathology (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Individual animal report of correlated gross and microscopic diagnoses PRINTED: 15-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 5
 PRESIDIO OF SAN FRANCISCO, CA 94129 Tissues With Gross Observations Only
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000616	Sex: Male	Group: 7	Dose level: 10 (MG/KG)/day
Day of death: 147	Status: Interim sacrifice 1	Terminal body weight (kms): 0.70	
Tissue	Gross observations / Comments	Correlated microscopic observations	
SPLEEN	NODULAR SURFACE, MILD/ 2X3MM NODULE ON THE VISCERAL SURFACE.	No correlated microscopic observation	
LIVER	ENLARGED, Trace CONGESTED, Trace	No correlated microscopic observation	

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Individual animal report of correlated gross and microscopic diagnoses PRINTED: 15-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 6
 PRESIDIO OF SAN FRANCISCO, CA 94129 Tissues With Gross Observations Only
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86D00559	Sex: Male	Group: 8	Dose level: 10 (MG/KG)/day
Day of death: 175	Status: Final sacrifice	Terminal body weight (kms):	0.66
Tissue	Gross observations / Comments	Correlated microscopic observations	
LIVER	ENLARGED, Trace/ ACCENTUATED ARCHITECTURE, ROUNDED EDGES.	INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.	
TESTIS	ABNORMAL PIGMENTATION/ PALE ATROPHIC/SMALL, BILATERALLY, Mild/ 1X1.5CM	No correlated microscopic observation	
		DEGENERATION, SEMINIFEROUS EPITHELIUM, Marked, Diffuse.	

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Individual animal report of correlated gross and microscopic diagnoses PRINTED: 15-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 7
 PRESIDIO OF SAN FRANCISCO, CA 94129 Tissues With Gross Observations Only
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000571	Sex: Male	Group: 8	Dose level: 10 (MG/KG)/day
Day of death: 175	Status: Final sacrifice	Terminal body weight (kms):	0.70
Gross observations / Comments		Correlated microscopic observations	
KIDNEY DILATED RENAL PELVIS, Trace/ THE PELVIS OF THE RIGHT DILATED RENAL PELVIS, Present. KIDNEY IS 2 X 4 MM.			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH Individual animal report of correlated gross and microscopic diagnoses PRINTED: 15-May-90
 DIV OF RES SUPP, PATH SERV GP Study Number: 86005 Page: 8
 PRESIDIO OF SAN FRANCISCO, CA 94129 Tissues With Gross Observations Only
 RAT/SPRAGUE-DAWLEY Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000591	Sex: Male	Group: 9	Dose level: 10 (MG/KG)/day
Day of death: 175	Status: Final sacrifice	Terminal body weight (kms): 0.73	
Tissue	Gross observations / Comments	Correlated microscopic observations	
KIDNEY CYST(S)		PROGRESSIVE RENAL DISEASE, Mild.	

Appendix O (cont.): PATHOLOGY

LETTERMAN, ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 1

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000517 Sex: Male
Day of death: 17 Status: Interim sacrifice 1 Group: 1 Dose level: Control
Terminal body weight (kms): 0.64

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	16.3	2.54	796.4	Low
05-May-87	147/21	KIDNEY	3.8	0.60	187.3	Low
05-May-87	147/21	HEART	1.7	0.26	82.5	Low
05-May-87	147/21	BRAIN	2.0	0.32	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.009	2.69	Low
05-May-87	147/21	TESTIS	3.30	0.515	161.11	Low
05-May-87	147/21	SPLEEN	0.6	0.09	29.2	Low

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memo >>
EYES & OPTIC N. LEFT EYE DESTROYED AT NECROPSY.

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
AORTA Required protocol tissue is missing.
THYMUS Required protocol tissue is missing.
MESENT LYMPH NOD Required protocol tissue is missing.
SPLEEN Required protocol tissue is missing.
LIVER VACUOLIZATION, FOCAL, Slight, Focal.
PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Animal: 860005j2 Sex: Male
Day of death: 147 Status: Interim sacrifice 1
Study Start Date: 10-Dec-86 Group: 1 Dose level: Control
SUBCHRONIC/180 DAY FEEDING Terminal body weight (kms): 0.75

Individual Animal Data Dump Table
Study Number: 86005

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	27.1	3.63	1234.1	
05-May-87	147/21	KIDNEY	4.3	0.58	196.1	High
05-May-87	147/21	HEART	1.8	0.24	79.9	Low
05-May-87	147/21	BRAIN	2.2	0.29	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.008	2.69	
05-May-87	147/21	TESTIS	3.64	0.488	165.63	
05-May-87	147/21	SPLEEN	1.1	0.15	50.2	

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
HEART INFLAMMATION, CHRONIC, Slight, Multifocal.
CHRONIC MYOFIBER DEGENERATION, Slight, Multifocal.
LUNGS HYPERPLASIA, BALT, Slight.
SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.
KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.
PROGRESSIVE RENAL DISEASE, Slight, Multifocal.
EPIDIDYMUS LYMPHOCYTE INFILTRATION, Slight, Focal.
TURBINATES INFLAMMATION, LYMPHOCYTIC, Mild, Multifocal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86D00532 Sex: Male
 Day of death: 147 Status: Interim sacrifice 1 Group: 1 Dose level: Control

Study Number: 86005 Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING Page: 3 PRINTED: 15-May-90

Terminal body weight (kms): 0.75

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

BONE, FEMUR Required protocol tissue is missing.

EXTRAOCULAR MM Miscellaneous.
 MYOPATHIC CHANGE, Slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Pump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 4

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000538		Sex: Male	Group: 1		Dose level: Control	
Day of death: 147		Status: Interim sacrifice 1	Terminal body weight (kms):		0.65	
Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	21.0	3.23	981.2	Low
05-May-87	147/21	KIDNEY	3.8	0.59	179.3	High
05-May-87	147/21	HEART	1.7	0.27	81.3	Low
05-May-87	147/21	BRAIN	2.1	0.33	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.05	0.008	2.52	
05-May-87	147/21	TESTIS	3.08	0.474	144.07	
05-May-87	147/21	SPLEEN	0.9	0.14	41.9	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

PARATHYROID Required protocol tissue is missing.

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild.

HEART INFLAMMATION, CHRONIC, Mild, Focal.

MESENT LYMPH NOD Required protocol tissue is missing.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATE, Slight, Multifocal.
PROGRESSIVE RENAL DISEASE, Slight, Multifocal.

URINARY BLADDER Required protocol tissue is missing.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 5

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000530 Sex: Male
Day of death: 147 Status: Interim sacrifice 1 Group: 1 Dose level: Control
Terminal body weight (kms): 0.65

Tissue Histopathologic diagnoses / Special histological comments
<< Pathology observations >>

EPIDIDYMUS MICROCYSTIC CHANGE, EPITHELIUM, Mild, Focal.

PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Mild, Multifocal.

BONE, FEMUR Required protocol tissue is missing.

CERVICAL LYMPH N Miscellaneous.
PLASMACYTOSIS, MEDULLARY, Moderate.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
HAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 6

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: Control
05-May-87	147/21	LIVER	19.3	3.21	961.6	Low
05-May-87	147/21	KIDNEY	3.7	0.61	182.4	High
05-May-87	147/21	HEART	1.7	0.28	83.5	Low
05-May-87	147/21	BRAIN	2.0	0.33	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.010	3.04	
05-May-87	147/21	TESTIS	3.24	0.538	161.24	
05-May-87	147/21	SPLEEN	1.0	0.16	48.3	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

THYROID GLAND CYST(S), Mild, Multifocal.

PARATHYROID Required protocol tissue is missing.

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

MESENT LYMPH NOD Required protocol tissue is missing.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Moderate.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Slight, Multifocal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86D00558 Sex: Male
 Day of death: 147 Status: Interim sacrifice 1

Study Start Date: 10-Dec-86 Group: 1 Dose level: Control
 Study Number: 86005 Terminal body weight (kms): 0.60
 SUBCHRONIC/180 DAY FEEDING

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

ADRENAL GLANDS Required protocol tissue is missing.

PRINTED: 15-May-90
 Page: 7

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 29-May-90
Page: 8

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 8600576		Sex: Male	Group: 1		Dose level: Control	
Day of death: 147		Status: Interim sacrifice 1	Terminal body weight (kms):		0.74	
Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	26.5	3.58	1196.8	
05-May-87	147/21	KIDNEY	4.3	0.58	195.2	High
05-May-87	147/21	HEART	2.0	0.27	91.6	Low
05-May-87	147/21	BRAIN	2.2	0.30	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.009	2.89	
05-May-87	147/21	TESTIS	3.88	0.523	174.88	
05-May-87	147/21	SPLEEN	1.0	0.13	42.9	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments
CERVICAL LYMPH N ENLARGED, Moderate BOTH ARE 1 CM IN DIAMETER.

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.
HEART INFLAMMATION, CHRONIC, Slight, Multifocal.
CHRONIC MYOFIBER DEGENERATION, Slight, Multifocal.
LUNGS HYPERPLASIA, BALIT, Slight, Multifocal.
THYMUS Required protocol tissue is missing.
KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Mild, Multifocal.
PROGRESSIVE RENAL DISEASE, Slight, Multifocal.
EXTEN DIG LONG M INFLAMMATION, CHRONIC, Mild, Focal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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 RAT/SPRAGUE-DAWLEY

Animal: 86D00576 Sex: Male
 Day of death: 147 Status: Interim sacrifice 1 Group: 1 Dose level: Control

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING Terminal body weight (kms): 0.74

Study Number: 86005

PRINTED: 15-May-90
 Page: 9

Tissue Histopathologic diagnoses / Special histological comments
 << Pathology Observations >>

CERVICAL LYMPH N Miscellaneous.
 PLASMACYTOSIS, MEDULLARY, Marked.

PREPUTIAL GLAND Miscellaneous.
 INFLAMMATION, CHRONIC, Mild.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 10

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86D00578		Sex: Male	Group: 1		Dose level: Control	
Day of death: 149		Status: Interim sacrifice 1	Terminal body weight (kms):		0.62	
Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
<< Organ Weights >>						
05-May-87	147/21	LIVER	22.9	3.69	1173.8	
05-May-87	147/21	KIDNEY	3.8	0.60	192.3	High
05-May-87	147/21	HEART	1.8	0.28	89.6	
05-May-87	147/21	BRAIN	2.0	0.31	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.09	0.014	4.35	
05-May-87	147/21	TESTIS	3.07	0.493	156.93	
05-May-87	147/21	SPLEEN	1.0	0.16	50.8	

Tissue Flnding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

PARATHYROID Required protocol tissue is missing.

SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

HEART INFLAMMATION, CHRONIC, Slight, Multifocal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.
PYELONEPHRITIS, ACUTE, Mild, Focal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Individual Animal Data Dump Table Study Number: 86005		PRINTED: 15-May-90 Page: 11
Animal: 86D00578		Sex: Male	Study Start Date: 10-Dec-86	SUBCHRONIC/180 DAY FEEDING
Day of death: 149	Status: Interim sacrifice 1	Group: 1	Dose level: Control	
			Terminal body weight (kms): 0.62	
Tissue	<< Pathology Observations >>			
	Histopathologic diagnoses / Special histological comments			
PANCREAS	INFLAMMATION, CHRONIC, Moderate, Multifocal.			
PITUITARY GLAND	CYST(S), PARS DISTALIS, Mild, Focal.			
CERVICAL LYMPH N	Miscellaneous. PLASMACYTOSIS, MEDULLARY, Moderate.			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 12

Animal: 86D00579 Sex: Male
Day of death: 149 Status: Interim sacrifice 1 Group: 1
Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: Control	Organ Status
05-May-87	147/21	LIVER	23.5	3.48			
05-May-87	147/21	KIDNEY	3.6	0.53			
05-May-87	147/21	HEART	1.8	0.27			Low
05-May-87	147/21	BRAIN	2.0	0.29			Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.010			
05-May-87	147/21	TESTIS	3.53	0.522			
05-May-87	147/21	SPLEEN	1.0	0.15			

<< Organ Weights >>

<< Gross Observations >>

Tissue Finding, severity
WHOLE BODY NO LESIONS RECOGNIZED

Gross Free-Text Comments

<< Necropsy Memos >>

Tissue Necropsy memos
No necropsy memos recorded on animal

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

PARATHYROID Required protocol tissue is missing.

SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Slight, Multifocal.

PITUITARY GLAND Required protocol tissue is missing.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 13

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86D00584		Sex: Male	Status: Interim sacrifice 1		Group: 1	Dose level: Control	
Day of death: 149							Terminal body weight (kms): 0.70
		<< O r g a n W e i g h t s >>					
Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status	
05-May-87	147/21	LIVER	27.1	3.89	1288.5		
05-May-87	147/21	KIDNEY	3.9	0.56	184.4		
05-May-87	147/21	HEART	1.9	0.27	89.4		Low
05-May-87	147/21	BRAIN	2.1	0.30	100.0		Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.010	3.42		
05-May-87	147/21	TESTIS	3.48	0.500	165.34		
05-May-87	147/21	SPLEEN	1.1	0.16	52.0		

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

HEART INFLAMMATION, CHRONIC, Slight, Multifocal.

CHRONIC MYOFIBER DEGENERATION, Slight, Multifocal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.

ARTERITIS, CHRONIC, Moderate, Focal.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.

PANCREAS INFLAMMATION, CHRONIC, Moderate, Multifocal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 14

Animal: 86000715 Sex: Male
Day of death: 149 Status: Interim sacrifice 1 Group: 1
Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Terminal body weight (kms): 0.59 Dose level: Control

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	20.9	3.53	1100.1	
05-May-87	147/21	KIDNEY	3.7	0.63	196.5	High
05-May-87	147/21	HEART	1.5	0.26	80.5	Low
05-May-87	147/21	BRAIN	1.9	0.32	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.011	3.53	
05-May-87	147/21	TESTIS	3.31	0.560	174.54	
05-May-87	147/21	SPLEEN	0.8	0.14	42.9	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

THYROID GLAND CYSTIC, Mild, Focal.

HEART CHRONIC MYOFIBER DEGENERATION, Slight, Multifocal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.

LIVER NECROSIS, ACUTE, Slight, Multifocal.

KIDNEY PROGRESSIVE RENAL DISEASE, Mild, Multifocal.

PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Mild, Multifocal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY			Individual Animal Data Dump Table Study Number: 86005			PRINTED: 15-May-90 Page: 15		
Animal: 86000725 Day of death: 149			Sex: Male Status: Interim sacrifice 1			Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING		
			Group: 1			Dose level: Control Terminal body weight (kms): 0.65		
Date	Day/week of Study	Organ Name	<< Organ Weights >>		Relative % of		Organ	
			Absolute Organ Weight (gms)	Body Weight	Brain Weight		Status	
05-May-87	147/21	LIVER	21.6	3.34	1053.4		Low	
05-May-87	147/21	KIDNEY	3.6	0.55	173.5			
05-May-87	147/21	HEART	1.6	0.25	78.7		Low	
05-May-87	147/21	BRAIN	2.0	0.32	100.0		Low	
05-May-87	147/21	ADRENAL GLANDS	0.08	0.012	3.71			
05-May-87	147/21	TESTIS	3.31	0.513	161.85			
05-May-87	147/21	SPLEEN	0.9	0.13	42.3			
			<< Gross Observations >>		Gross Free-Text Comments			
Tissue			Finding, severity					
WHOLE BODY			NO LESIONS RECOGNIZED					
Tissue			Necropsy memos		<< Necropsy Memos >>			
No necropsy memos recorded on animal								
Tissue			<< Pathology Observations >>					
HEART			Histopathologic diagnoses / Special histological comments					
KIDNEY			CHRONIC MYOFIBER DEGENERATION, Slight, Multifocal.					
TURBINATES			PYELONEPHRITIS, ACUTE, Mild.					
CERVICAL LYMPH N			Required protocol tissue is missing.					
			Miscellaneous.					
			PLASMACYTOSIS, MEDULLARY, Moderate.					

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 16

Animal: 86D00540 Sex: Male
Day of death: 1/5 Status: Final sacrifice
Study Start Date: 10-Dec-86
SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	<< Organ Weights >>		Relative % of Brain Weight	Organ Status
			Absolute Organ Weight (gms)	Relative % of Body Weight		
05-May-87	147/21	LIVER	19.4	2.96	830.3	Low
05-May-87	147/21	KIDNEY	3.6	0.55	153.7	
05-May-87	147/21	HEART	1.6	0.24	67.1	Low
05-May-87	147/21	BRAIN	2.3	0.36	100.0	
05-May-87	147/21	ADRENAL GLANDS	0.07	0.010	2.87	Low
05-May-87	147/21	TESTIS	3.10	0.473	132.83	
05-May-87	147/21	SPLEEN	1.0	0.15	41.8	

Tissue	Finding, severity	<< Gross Observations >>	
		Gross Free-Text Comments	
WHOLE BODY	NO LESIONS RECOGNIZED		

Tissue	Necropsy memos	<< Necropsy Memos >>	
No necropsy memos recorded on animal			

Tissue	Histopathologic diagnoses / Special histological comments	<< Pathology Observations >>	
		Required protocol tissue is missing.	
PARATHYROID			
HEART	INFLAMMATION, CHRONIC, Slight, Multifocal.		
THYMUS	Required protocol tissue is missing.		
TESTIS	DEGENERATION, SEMINIFEROUS EPITHELIUM, Slight, Multifocal.		
PANCREAS	INFLAMMATION, CHRONIC, Slight, Multifocal.		
SCIATIC NERVE	Required protocol tissue is missing.		
SKELETAL MUSCLE	Required protocol tissue is missing.		

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH		Individual Animal Data Dump Table		PRINTED: 15-May-90
DIV OF RES SUPP, PATH SERV GP		Study Number: 96005		Page: 17
PRESIDIO OF SAN FRANCISCO, CA 94129				
RAT/SPRAGUE-DAWLEY		SUBCHRONIC/180 DAY FEEDING		
-----		-----		
Animal: 86D00540	Sex: Male	Group: 1	Dose level: Control	
Day of death: 175	Status: Final sacrifice		Terminal body weight (kms): 0.66	

Tissue	<< Pathology Observations >>			

TURBINATES	Histopathologic diagnoses / Special histological comments			

	INFLAMMATION, LYMPHOCYTIC, Slight, Multifocal.			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF R'S SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 18

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86D00585		Sex: Male	Status: Final sacrifice		Group: 1	Dose level: Control	
Day of death: 1/5							Terminal body weight (kms): 0.52
Date	Day/week of Study	Organ Name	<< O r g a n W e i g h t s >>		Relative % of Body Weight	Relative % of Brain Weight	Organ Status
			Absolute Organ Weight (gms)				
05-May-87	147/21	LIVER	14.3		2.77	639.6	low
05-May-87	147/21	KIDNEY	2.8		0.55	126.7	
05-May-87	147/21	HEART	1.4		0.27	61.5	low
05-May-87	147/21	BRAIN	2.2		0.43	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.05		0.009	2.01	
05-May-87	147/21	TESTIS	3.93		0.761	175.67	High
05-May-87	147/21	SPLEEN	0.7		0.14	33.1	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments
WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.
SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.
EPIDIDYMUS MICROCYSTIC CHANGE, EPITHELIUM, Slight.
LYMPHOCYTE INFILTRATION, Slight, Multifocal.
PANCREAS INFLAMMATION, CHRONIC, Slight, Multifocal.
TURBINATES INFLAMMATION, LYMPHOCYTIC, Mild, Multifocal.
BONE, FEMUR Required protocol tissue is missing.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 19

SUBCHRONIC/180 DAY FEEDING

Study Start Date: 10-Dec-86

Animal: 86000614 Sex: Male Status: Final sacrifice Group: 1 Dose level: Control 0.88
Day of death: 175

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	25.7	2.94	1102.0	Low
05-May-87	147/21	KIDNEY	3.9	0.44	165.0	Low
05-May-87	147/21	HEART	2.2	0.25	93.1	Low
05-May-87	147/21	BRAIN	2.3	0.27	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.05	0.006	2.31	Low
05-May-87	147/21	TESTIS	4.46	0.509	190.97	Low
05-May-87	147/21	SPLEEN	1.1	0.12	45.0	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
Required protocol tissue is missing.

PARATHYROID INFLAMMATION, CHRONIC, Mild, Multifocal.

SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Focal.

LACRIMAL GLAND INFLAMMATION, CHRONIC, Mild, Focal.

HEART TELANGIECTASIS, Slight, Focal.

LIVER CORTICAL LYMPHOCYTE AGGREGATES, Mild, Multifocal.

KIDNEY INFLAMMATION, LYMPHOCYTIC, Mild, Multifocal.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Mild, Multifocal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 20

Animal: 8600647 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING
Day of death: 175 Status: Final sacrifice Group: 1 Dose level: Control
Terminal body weight (kms): 0.67

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	20.8	3.09	919.9	Low
05-May-87	147/21	KIDNEY	3.3	0.49	144.5	
05-May-87	147/21	HEART	1.7	0.26	76.7	Low
05-May-87	147/21	BRAIN	2.3	0.34	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.008	2.48	
05-May-87	147/21	TESTIS	3.49	0.520	154.92	
05-May-87	147/21	SPLEEN	0.9	0.13	40.2	

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
THYROID GLAND CYST(S), Slight, Focal.

SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

HEART INFLAMMATION, CHRONIC, Mild, Multifocal.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Mild, Multifocal.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Focal.

PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

PITUITARY GLAND CYST(S), PARS DISTALIS, Mild, Focal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Individual Animal Data Dump Table Study Number: 86005		PRINTED: 15-May-90 Page: 21
Animal: 86D00647		Sex: Male	Study Start Date: 10-Dec-86	SUBCHRONIC/180 DAY FEEDING
Day of death: 175	Status: Final sacrifice	Group: 1	Terminal body weight (kms):	Dose level: Control
				0.67
Tissue	<< Pathology Observations >>			
	Histopathologic diagnoses / Special histological comments			
CERVICAL LYMPH N	Miscellaneous.			
	PLASMACYTOSIS, MEDULLARY, Moderate.			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 22

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000665		Sex: Male	Group: 1		Dose level: Control	
Day of death: 175		Status: Final sacrifice	Terminal body weight (kms):		0.66	
Date	Day/week of Study	Organ Name	<< Organ Weights >>		Relative % of Brain Weight	Organ Status
			Absolute Organ Weight (gms)	Relative % of Body Weight		
05-May-87	147/21	LIVER	20.6	3.11	913.1	Low
05-May-87	147/21	KIDNEY	3.3	0.50	147.7	
05-May-87	147/21	HEART	1.8	0.27	78.2	Low
05-May-87	147/21	BRAIN	2.3	0.34	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.011	3.23	
05-May-87	147/21	TESTIS	3.76	0.567	166.42	
05-May-87	147/21	SPLEEN	0.7	0.11	32.2	

Tissue	Finding, severity	<< Gross Observations >>
WHOLE BODY	NO LESIONS RECOGNIZED	Gross Free-Text Comments

Tissue	Necropsy memos	<< Necropsy Memos >>
No necropsy memos recorded on animal		

Tissue	Histopathologic diagnoses / Special histological comments	<< Pathology Observations >>
SALIVARY GLAND	INFLAMMATION, CHRONIC, Slight, Focal.	
HEART	INFLAMMATION, CHRONIC, Slight, Multifocal. CHRONIC MYOFIBER DEGENERATION, Slight, Multifocal.	
SPLEEN	INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.	
LIVER	INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.	
KIDNEY	CORTICAL LYMPHOCYTE AGGREGATES, Slight, Focal.	
PANCREAS	INFLAMMATION, CHRONIC, Moderate, Multifocal.	
JEJUNUM	Required protocol tissue is missing.	

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH		Individual Animal Data Dump Table		PRINTED: 15-May-90
DIV OF RES SUPP, PATH SERV GI		Study Number: 86005		Page: 23
PRESIDIO OF SAN FRANCISCO, CA 94129		Study Start Date: 10-Dec-86		SUBCHRONIC/180 DAY FEEDING
RAT/SPRAGUE-DAWLEY		Group: 1		
Animal: 86D00665	Sex: Male		Dose level: Control	
Day of death: 175	Status: Final sacrifice		Terminal body weight (kms): 0.66	
<< Pathology Observations >>				
Tissue	Histopathologic diagnoses / Special histological comments			
PREPUTIAL GLAND	Miscellaneous.			
	INFLAMMATION, CHRONIC, Mild.			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 24

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86D00503 Sex: Male
Day of death: 148 Status: Interim sacrifice 1 Group: 2 Dose level: 1. (MG/KG)/day
Terminal body weight (kms): 0.65

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	23.5	3.61	1045.3	
05-May-87	147/21	KIDNEY	3.7	0.57	165.7	High
05-May-87	147/21	HEART	1.9	0.29	83.5	
05-May-87	147/21	BRAIN	2.2	0.35	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.05	0.008	2.18	
05-May-87	147/21	TESTIS	3.38	0.520	150.56	
05-May-87	147/21	SPLEEN	0.8	0.13	36.8	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

THYROID GLAND CYST(S), Slight, Multifocal.

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild, Diffuse.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Focal.

PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Mild, Multifocal.

CERVICAL LYMPH N Miscellaneous.
PLASMACYTOSIS, MEDULLARY, Slight.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY			Individual Animal Data Dump Table Study Number: 86005			PRINTED: 15-May-90 Page: 25		
Animal: 86D00515 Day of death: 148			Sex: Male Status: Interim sacrifice 1			SUBCHRONIC/180 DAY FEEDING Study Start Date: 10-Dec-86		
			Group: 2			Dose level: 1. (MG/KG)/day Terminal body weight (kms): 0.84		
Date		Day/week of Study	Organ Name	<< Organ Weights >>		Relative % of		Organ Status
				Absolute Organ Weight (gms)	Relative % of Body Weight	Brain Weight		
05-May-87	147/21		LIVER	27.3	3.24	1126.5		Low
05-May-87	147/21		KIDNEY	4.1	0.49	169.8		
05-May-87	147/21		HEART	2.1	0.25	85.7		Low
05-May-87	147/21		BRAIN	2.4	0.29	100.0		Low
05-May-87	147/21		ADRENAL GLANDS	0.08	0.009	3.22		
05-May-87	147/21		TESTIS	4.07	0.484	168.13		
05-May-87	147/21		SPLEEN	1.4	0.16	55.8		
Tissue		Finding, severity	<< Gross Observations >>		Gross Free-Text Comments			
WHOLE BODY		NO LESIONS RECOGNIZED						
Tissue		Necropsy memos	<< Necropsy Memos >>					
No necropsy memos recorded on animal								
Tissue		Histopathologic diagnoses / Special histological comments	<< Pathology Observations >>					
SALIVARY GLAND		INFLAMMATION, CHRONIC, Slight, Multifocal.						
HEART		INFLAMMATION, CHRONIC, Mild, Focal.						
PANCREAS		INFLAMMATION, CHRONIC, Mild, Multifocal.						
COLON		GRANULOMA(S), SUBMUCOSA, Mild, Multifocal.						
CERVICAL LYMPH N		Miscellaneous. PLASMACYTOSIS, MEDULLARY, Mild.						

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 26

Animal: 86D00549 Sex: Male
Day of death: 148 Status: Interim sacrifice 1

Study Start Date: 10-Dec-86

SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	21.8	3.66	994.8	
05-May-87	147/21	KIDNEY	3.7	0.62	167.8	High
05-May-87	147/21	HEART	1.6	0.26	71.1	Low
05-May-87	147/21	BRAIN	2.2	0.37	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.011	2.97	
05-May-87	147/21	TESTIS	3.57	0.600	163.33	
05-May-87	147/21	SPLEEN	1.0	0.16	44.4	

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
THYROID GLAND CYST(S), Mild, Focal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 27

Animal: 86000582 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Day of death: 148 Status: Interim sacrifice 1 Group: 2 Terminal body weight (kms): 0.64 Dose level: 1. (MG/KG)/day

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	23.7	3.68	1042.8	
05-May-87	147/21	KIDNEY	4.3	0.67	189.0	High
05-May-87	147/21	HEART	1.7	0.26	73.5	Low
05-May-87	147/21	BRAIN	2.3	0.35	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.05	0.008	2.34	
05-May-87	147/21	TESTIS	3.36	0.523	148.15	
05-May-87	147/21	SPLEEN	0.8	0.13	35.9	

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.
LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 28

SUBCHRONIC/180 DAY FEEDING

Study Start Date: 10-Dec-86

Animal: 86D00594
Day of death: 148

Sex: Male
Status: Interim sacrifice 1

Group: 2

Dose level: 1. (MG/KG)/day
Terminal body weight (kms): 0.81

Date	Day/week of Study	Organ Name	<< Organ Absolute Organ Weight (gms)	Weights Relative % of Body Weight	>> Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	24.2	3.01	1170.0	Low
05-May-87	147/21	KIDNEY	4.5	0.56	217.8	High
05-May-87	147/21	HEART	1.9	0.23	89.6	Low
05-May-87	147/21	BRAIN	2.1	0.26	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.008	3.14	
05-May-87	147/21	TESTIS	3.59	0.446	173.12	
05-May-87	147/21	SPLEEN	1.0	0.12	48.5	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments
WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.
HEART INFLAMMATION, CHRONIC, Mild, Multifocal.
SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.
KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.
PANCREAS INFLAMMATION, CHRONIC, Moderate, Multifocal.
TURBINATES INFLAMMATION, LYMPHOCYTIC, Slight, Multifocal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 29

Animal: 86000610 Sex: Male Status: Interim sacrifice 1 Group: 2 Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Terminal body weight (kms)	Dose level: 1. (MG/KG)/day	Organ Status
05-May-87	147/21	LIVER	17.6	3.41	804.2			
05-May-87	147/21	KIDNEY	4.1	0.79	186.5			High
05-May-87	147/21	HEART	1.6	0.32	74.9			
05-May-87	147/21	BRAIN	2.2	0.42	100.0			Low
05-May-87	147/21	ADRENAL GLANDS	0.10	0.020	4.67			
05-May-87	147/21	TESTIS	3.75	0.729	171.87			High
05-May-87	147/21	SPLEEN	1.0	0.19	45.0			

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.
PROGRESSIVE RENAL DISEASE, Slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 30

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86000653 Sex: Male Status: Interim sacrifice 1 Group: 2 Dose level: 1. (MG/KG)/day
Day of death: 149 Terminal body weight (kms): 0.68

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	25.9	3.52	1080.9	
05-May-87	147/21	KIDNEY	4.3	0.63	193.8	High
05-May-87	147/21	HEART	1.7	0.25	76.5	Low
05-May-87	147/21	BRAIN	2.2	0.33	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.09	0.013	4.07	
05-May-87	147/21	TESTIS	3.72	0.547	168.22	
05-May-87	147/21	SPLEEN	1.2	0.18	55.1	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

PANCREAS INFLAMMATION, CHRONIC, Moderate, Multifocal.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Slight, Multifocal.

CERVICAL LYMPH N Miscellaneous.
PLASMACYTOSIS, MEDULLARY, Moderate.

EXTRAOCULAR MM Miscellaneous.
MYOPATHIC CHANGE, Slight.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 32

Animal: 86D00710 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Day of death: 149 Status: Interim sacrifice 1 Group: 2 Terminal body weight (kms): 1. (MG/KG)/day
Dose level: 0.74

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	24.9	3.35	1187.7	Low
05-May-87	147/21	KIDNEY	3.9	0.53	187.5	Low
05-May-87	147/21	HEART	1.9	0.26	92.4	Low
05-May-87	147/21	BRAIN	2.1	0.28	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.08	0.011	3.87	
05-May-87	147/21	TESTIS	3.42	0.461	163.35	
05-May-87	147/21	SPLEEN	1.0	0.13	47.6	

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
HEART INFLAMMATION, CHRONIC, Mild, Multifocal.
SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.
LIVER NECROSIS, ACUTE, Mild, Multifocal.
KIDNEY PROGRESSIVE RENAL DISEASE, Mild.
PANCREAS INFLAMMATION, CHRONIC, Moderate, Multifocal.
PREPUTIAL GLAND Miscellaneous.
INFLAMMATION, CHRONIC, Slight.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 33

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: 1. (MG/KG)/day
05-May-87	147/21	LIVER	24.9	3.54	1115.3	High
05-May-87	147/21	KIDNEY	4.6	0.66	207.9	Low
05-May-87	147/21	HEART	1.9	0.27	85.9	Low
05-May-87	147/21	BRAIN	2.2	0.32	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.08	0.012	3.63	
05-May-87	147/21	TESTIS	3.65	0.520	163.89	
05-May-87	147/21	SPLEEN	1.1	0.15	47.4	

Tissue	Finding, severity	Gross Observations
SPLEEN	ENLARGED (SPLENOEGALY), Moderate	Gross Free-Text Comments

Tissue	Necropsy memos	Necropsy Memos
No necropsy memos recorded on animal		

Tissue	Histopathologic diagnoses / Special histological comments	Pathology Observations
THYROID GLAND	CYST(S), Mild, Focal.	
SALIVARY GLAND	INFLAMMATION, CHRONIC, Slight, Multifocal.	
HEART	INFLAMMATION, CHRONIC, Slight, Multifocal.	
SPLEEN	INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.	
LIVER	INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal. ARTERITIS, CHRONIC, Mild, Focal.	
KIDNEY	CORTICAL LYMPHOCYTE AGGREGATES, Mild, Focal. PROGRESSIVE RENAL DISEASE, Slight, Multifocal.	

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86000732 Sex: Male
 Day of death: 149 Status: Interim sacrifice 1

Individual Animal Data Dump Table
 Study Number: 86005

Study Start Date: 10-Dec-86 Group: 2 SUBCHRONIC/180 DAY FEEDING

PRINTED: 15-May-90
 Page: 34

Terminal body weight: 0.70 Dose level: 1. (MG/KG)/day

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

PANCREAS INFLAMMATION, CHRONIC, Slight, Multifocal.

MESENTERY Miscellaneous.
 ARTERITIS, CHRONIC, Mild.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 35

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	26.2	3.84	1169.8	
05-May-87	147/21	KIDNEY	4.1	0.61	184.7	High
05-May-87	147/21	HEART	1.9	0.28	84.2	Low
05-May-87	147/21	BRAIN	2.2	0.33	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.08	0.011	3.35	
05-May-87	147/21	TESTIS	2.50	0.367	111.79	
05-May-87	147/21	SPLEEN	1.2	0.17	52.7	

Animal: 86D00534 Sex: Male Dose level: 10. (MG/KG)/day
Day of death: 149 Status: Interim sacrifice 1 Group: 3 Terminal body weight (kms): 0.68
Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Tissue	Finding, severity	Gross Observations	Gross Free-Text Comments
SKIN	ALOPECIA, Trace		
TESTIS	ATROPHIC/SMALL, UNILATERALLY, Moderate		A 1CM ABRASION IS PRESENT IN THE VENTRAL ABDOMINAL REGION.

THE LEFT TESTIS IS ABOUT HALF THE SIZE OF THE RIGHT TESTIS.

Tissue	Necropsy memos	Necropsy Memos
No necropsy memos recorded on animal		

Tissue	Histopathologic diagnoses / Special histological comments	Pathology Observations
SALIVARY GLAND	INFLAMMATION, CHRONIC, Mild, Multifocal.	
HEART	INFLAMMATION, CHRONIC, Slight, Focal.	
LIVER	INFLAMMATION, CHRONIC, MULTIFOCAL, Mild, Multifocal. NECROSIS, ACUTE, Slight, Multifocal.	
KIDNEY	CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal. PROGRESSIVE RENAL DISEASE, Mild, Multifocal.	
TESTIS	DEGENERATION, SEMINIFEROUS EPITHELIUM, Marked, Diffuse.	

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86000534 Sex: Male
 Day of death: 149 Status: Interim sacrifice 1

Individual Animal Data Dump Table
 Study Number: 86005

Study Start Date: 10-Dec-86 Group: 3 SUBCHRONIC/180 DAY FEEDING

Dose level: 10. (MG/KG)/day
 Terminal body weight (kms): 0.68

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

SKIN INFLAMMATION, CHRONIC, Moderate, Focal.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Slight, Multifocal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 37

Animal: 86D00536		Sex: Male	SUBCHRONIC/180 DAY FEEDING	
Day of death: 149	Status: Interim sacrifice 1	Group: 3	Dose level: 10. (MG/KG)/day	Terminal body weight (kms): 0.61
Study Start Date: 10-Dec-86				
Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight
05-May-87	147/21	LIVER	25.3	4.18
05-May-87	147/21	KIDNEY	3.9	0.65
05-May-87	147/21	HEART	2.0	0.34
05-May-87	147/21	BRAIN	1.8	0.30
05-May-87	147/21	ADRENAL GLANDS	0.08	0.012
05-May-87	147/21	TESTIS	3.85	0.636
05-May-87	147/21	SPLEEN	0.8	0.14
		Relative % of Brain Weight	Organ Status	
		1408.4	High	
		217.9	Low	
		114.0		
		100.0		
		4.18		
		214.48		
		46.5		
Tissue	Flndng, severity	<< Gross Observations >>		
WHOLE BODY	NO LESIONS RECOGNIZED	Gross Free-Text Comments		
Tissue	Necropsy memos	<< Necropsy Memos >>		
No necropsy memos recorded on animal				
Tissue	Histopathologic diagnoses / Special histological comments	<< Pathology Observations >>		
SALIVARY GLAND	INFLAMMATION, CHRONIC, Mild, Multifocal.			
LUNGS	HYPERPLASIA, BAL, slight.			
SPLEEN	INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.			
KIDNEY	CORTICAL LYMPHOCYTE AGGREGATES, slight, Multifocal.			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 38

Animal: 86D00572 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Day of death: 149 Status: Interim sacrifice 1 Group: 3 Dose level: 10. (MG/KG)/day
Terminal body weight (kms): 0.59

<< Organ Weights >>

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	23.3	3.95	1000.0	
05-May-87	147/21	KIDNEY	4.0	0.68	172.7	High
05-May-87	147/21	HEART	1.7	0.29	73.8	
05-May-87	147/21	BRAIN	2.3	0.40	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.09	0.016	3.94	
05-May-87	147/21	TESTIS	3.53	0.599	151.44	
05-May-87	147/21	SPLEEN	0.8	0.13	33.9	

<< Gross Observations >>

Tissue	Finding, severity	Gross Free-Text Comments
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LIVER	ENLARGED, Mild ABNORMAL PIGMENTATION, Mild	EDGES WERE ALSO ROUNDED. CENTRAL PALLOR, MARKEDLY ACCENTUATED ARCHITECTURE
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<< Necropsy Memos >>

Tissue	Necropsy memos
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No necropsy memos recorded on animal

<< Pathology Observations >>

Tissue	Histopathologic diagnoses / Special histological comments
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SPLEEN	INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.
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LIVER	INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.
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KIDNEY	CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal. PROGRESSIVE RENAL DISEASE, Mild, Multifocal.
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PANCREAS	INFLAMMATION, CHRONIC, Slight, Multifocal.
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PITUITARY GLAND	CYST(S), PARS DISTALIS, Slight, Multifocal.
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PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 39

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 86D00603		Sex: Male	Group: 3		Dose level: 10. (MG/KG)/day	
Day of death: 149		Status: Interim sacrifice 1	Terminal body weight (kms): 0.64		10. (MG/KG)/day	
Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	19.4	3.02	937.9	Low
05-May-87	147/21	KIDNEY	3.2	0.49	153.5	Low
05-May-87	147/21	HEART	1.6	0.25	77.9	Low
05-May-87	147/21	BRAIN	2.1	0.32	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.010	3.05	
05-May-87	147/21	TESTIS	3.17	0.495	153.66	
05-May-87	147/21	SPLEEN	0.9	0.14	42.9	

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.
HEART INFLAMMATION, CHRONIC, Slight, Multifocal.
LUNGS ALVEOLAR HISTIOCYTOSIS, Mild, Focal.
LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.
NECROSIS, ACUTE, Slight, Multifocal.
THROMBOSIS, PORTAL VEIN, Slight, Focal.
KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Mild, Multifocal.
PROGRESSIVE RENAL DISEASE, Slight, Multifocal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86D00603 Sex: Male
 Day of death: 149 Status: Interim sacrifice 1 Group: 3

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Study Number: 86005 Dose level: 10. (MG/KG)/day
 Terminal body weight (kms): 0.64

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

EXTRAOCULAR MM Miscellaneous.
 MYOPATHIC CHANGE, Slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 41

Animal: 86000613 Sex: Male Status: Interim sacrifice 1 Group: 3 Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: 10. (MG/KG)/day	Organ Status
05-May-87	147/21	LIVER	21.9	3.47			
05-May-87	147/21	KIDNEY	3.5	0.55	1016.1		
05-May-87	147/21	HEART	1.4	0.23	161.2		Low
05-May-87	147/21	BRAIN	2.2	0.34	66.7		Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.009	100.0		
05-May-87	147/21	TESTIS	3.03	0.479	2.60		
05-May-87	147/21	SPLEEN	0.9	0.15	140.54		
					43.5		

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

HEART INFLAMMATION, CHRONIC, Mild, Focal.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Mild, Multifocal.
ARTERITIS, CHRONIC, Mild, Focal.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Mild, Multifocal.
PROGRESSIVE RENAL DISEASE, Mild, Multifocal.

PANCREAS INFLAMMATION, CHRONIC, Moderate, Multifocal.

CERVICAL LYMPH N Miscellaneous.
PLASMACYTOSIS, MEDULLARY, Mild.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 42

Animal: 86000638 Sex: Male Status: Interim sacrifice 1 Group: 3 Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Day of death: 149 Terminal body weight (kms): 10. (MG/KG)/day Dose level: 0.66

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	23.0	3.47	1091.3	
05-May-87	147/21	KIDNEY	4.1	0.61	192.7	High
05-May-87	147/21	HEART	1.7	0.26	82.8	Low
05-May-87	147/21	BRAIN	2.1	0.32	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.03	0.005	1.56	Low
05-May-87	147/21	TESTIS	3.84	0.579	182.12	
05-May-87	147/21	SPLEEN	0.9	0.14	44.2	

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
ADRENAL GLANDS ONE ADRENAL GLAND MISSING

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Focal.
PROGRESSIVE RENAL DISEASE, Mild, Multifocal.

PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

EXTRAOCULAR MM Miscellaneous.
MYOPATHIC CHANGE, Slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 43

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: 10. (MG/KG)/day
05-May-87	147/21	LIVER	19.5	3.25		
05-May-87	147/21	KIDNEY	3.6	0.59		
05-May-87	147/21	HEART	1.4	0.23		
05-May-87	147/21	BRAIN	1.9	0.31		
05-May-87	147/21	ADRENAL GLANDS	0.07	0.012		
05-May-87	147/21	TESTIS	3.14	0.522		
05-May-87	147/21	SPLEEN	0.8	0.14		

Animal: 86000658 Sex: Male
Status: Interim sacrifice 1 Group: 3
Study Start Date: 10-Dec-86
SUBCHRONIC/180 DAY FEEDING

Tissue	Finding, severity	Gross Observations	Gross Free-Text Comments
WHOLE BODY	NO LESIONS RECOGNIZED		

Tissue	Necropsy memos	Necropsy Memos
No necropsy memos recorded on animal		

Tissue	Histopathologic diagnoses / Special histological comments	Pathology Observations
SALIVARY GLAND	INFLAMMATION, CHRONIC, Mild, Multifocal.	
LACRIMAL GLAND	INFLAMMATION, CHRONIC, Slight, Multifocal.	
LIVER	INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.	
KIDNEY	CORTICAL LYMPHOCYTE AGGREGATES, Mild, Focal. PROGRESSIVE RENAL DISEASE, Slight, Multifocal.	
PANCREAS	INFLAMMATION, CHRONIC, Mild, Multifocal.	
COLON	GRANULOMA(S), SUBMUCOSA, Slight, Focal.	

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH		Individual Animal Data Dump Table		PRINTED: 15-May-90
DIV OF RES SUPP, PATH SERV GP		Study Number: 86005		Page: 44
PRESIDIO OF SAN FRANCISCO, CA 94129		Study Start Date: 10-Dec-86		
RAT/SPRAGUE-DAWLEY		SUBCHRONIC/180 DAY FEEDING		
Animal: 86000658	Sex: Male	Group: 3	Dose level: 10. (MG/KG)/day	
Day of death: 149	Status: Interim sacrifice 1		Terminal body weight (kms): 0.60	
<p> Tissue Histopathologic diagnoses / Special histological comments ----- MESENTERY Miscellaneous. INFLAMMATION, GRANULOMATOUS, Mild, Focal. EXTRAOCULAR MM Miscellaneous. MYOPATHIC CHANGE, Slight. </p>				

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 45

Animal: 86000662 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING
Day of death: 149 Status: Interim sacrifice 1 Group: 3 Dose level: 10. (MG/KG)/day
Terminal body weight (kms): 0.74

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	19.9	2.69	962.6	Low
05-May-87	147/21	KIDNEY	3.7	0.49	177.3	Low
05-May-87	147/21	HEART	1.7	0.23	80.8	Low
05-May-87	147/21	BRAIN	2.1	0.28	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.010	3.43	
05-May-87	147/21	TESTIS	3.50	0.473	169.44	
05-May-87	147/21	SPLEEN	0.9	0.12	42.1	

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
HEART INFLAMMATION, CHRONIC, Mild, Multifocal.
LUNGS HYPERPLASIA, BAL, Slight.
SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.
LIVER INFLAMMATION, CHRONIC, MULTIFOCA, Slight, Multifocal.
KIDNEY PROGRESSIVE RENAL DISEASE, Slight, Multifocal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 46

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	23.2	3.27	1150.7	Low
05-May-87	147/21	KIDNEY	3.5	0.50	175.4	
05-May-87	147/21	HEART	1.7	0.25	86.7	Low
05-May-87	147/21	BRAIN	2.0	0.28	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.008	2.93	
05-May-87	147/21	TESTIS	3.69	0.520	183.13	
05-May-87	147/21	SPLEEN	1.3	0.18	64.5	

Animal: 86D00671 Sex: Male
Day of death: 149 Status: Interim sacrifice 1 Group: 3
Dose level: 10. (MG/KG)/day
Terminal body weight (kms): 0.71

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

HEART INFLAMMATION, CHRONIC, Slight, Multifocal.
CHRONIC MYOFIBER DEGENERATION, Slight, Multifocal.

LUNGS GRANULOMA(S), Slight, Focal.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Focal.
PROGRESSIVE RENAL DISEASE, Slight, Multifocal.

COLON GRANULOMA(S), SUBMUCOSA, Mild, Multifocal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY		Individual Animal Data Dump Table Study Number: 86005		PRINTED: 15-May-90 Page: 47
Animal: 86D00671		Sex: Male	Study Start Date: 10-Dec-86	SUBCHRONIC/180 DAY FEEDING
Day of death: 149	Status: Interim sacrifice 1	Group: 3	Dose level: 10. (MG/KG)/day	
Tissue		Terminal body weight (kms): 0.71		
<< pathology observations >>				
Histopathologic diagnoses / Special histological comments				
DIAPHRAGM	INFLAMMATION AND MYOFIBER DEGENERATION, CHRONIC, Mild, Multifocal.			
CERVICAL LYMPH N	Miscellaneous. PLASMACYTOSIS, MEDULLARY, Mild.			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 48

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: 10. (MG/KG)/day	Organ Status
05-May-87	147/21	LIVER	23.5	3.31	1105.7		Low
05-May-87	147/21	KIDNEY	3.5	0.49	164.1		Low
05-May-87	147/21	HEART	1.8	0.26	85.7		Low
05-May-87	147/21	BRAIN	2.1	0.30	100.0		Low
05-May-87	147/21	ADRENAL GLANDS	0.05	0.007	2.31		Low
05-May-87	147/21	TESTIS	3.74	0.528	176.06		
05-May-87	147/21	SPLEEN	0.8	0.11	36.5		

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue << Pathology Observations >>

THYROID GLAND Histopathologic diagnoses / Special histological comments

CYST(S), Mild, Multifocal.

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.

EPIDIDYMUS MICROCYSTIC CHANGE, EPITHELIUM, Mild.

TESTIS DEGENERATION, SEMINIFEROUS EPITHELIUM, Slight.

PANCREAS INFLAMMATION, CHRONIC, Mild, Focal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 49

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	16.9	2.96	845.0	Low
05-May-87	147/21	KIDNEY	3.3	0.58	165.0	High
05-May-87	147/21	HEART	1.7	0.30	85.0	
05-May-87	147/21	BRAIN	2.0	0.35	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.011	3.00	
05-May-87	147/21	TESTIS	3.49	0.612	174.50	
05-May-87	147/21	SPLEEN	0.8	0.14	40.0	

Animal: 86000516 Sex: Male
Day of death: 147 Status: Interim sacrifice 1 Group: 7
Dose level: 10. (MG/KG)/day
Terminal body weight (kms): 0.57

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild, Multifocal.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.

PANCREAS INFLAMMATION, CHRONIC, Slight, Multifocal.

PITUITARY GLAND Required protocol tissue is missing.

CERVICAL LYMPH N Miscellaneous.
PLASMACYTOSIS, MEDULLARY, Slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86D00516 Sex: Male
 Day of death: 147 Status: Interim sacrifice 1

Study Start Date: 10-Dec-86 Group: 7 SUBCHRONIC/180 DAY FEEDING

Study Number: 86005 PRINTED: 15-May-90
 Page: 50

Terminal body weight (kms): 10. (MG/KG)/day
 Dose level: 0.57

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

EXTRAOCULAR MM Miscellaneous.
 MYOPATHIC CHANGE, slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 51

Animal: 86000535 Sex: Male
Day of death: 147 Status: Interim sacrifice 1

Study Start Date: 10-Dec-86

SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: 10. (MG/KG)/day
<< Organ Weights >>						
05-May-87	147/21	LIVER	20.6	3.12	981.0	Low
05-May-87	147/21	KIDNEY	3.9	0.59	185.7	High
05-May-87	147/21	HEART	2.7	0.41	128.6	
05-May-87	147/21	BRAIN	2.1	0.32	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.011	3.33	
05-May-87	147/21	TESTIS	3.45	0.523	164.29	
05-May-87	147/21	SPLEEN	1.0	0.15	47.6	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

HEART INFLAMMATION, CHRONIC, Slight, Focal.

LIVER NECROSIS, ACUTE, Mild, Multifocal.

PANCREAS INFLAMMATION, CHRONIC, Mild.

SOLEUS MUSCLE INFLAMMATION, CHRONIC, Mild.

PREPUTIAL GLAND Miscellaneous.
INFLAMMATION, CHRONIC, Mild.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 52

Animal: 86000560 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: 10. (MG/KG)/day	Organ Status
05-May-87	147/21	LIVER	25.1	3.35	1255.0	0.75	Low
05-May-87	147/21	KIDNEY	5.0	0.67	250.0		High
05-May-87	147/21	HEART	1.9	0.25	95.0		Low
05-May-87	147/21	BRAIN	2.0	0.27	100.0		Low
05-May-87	147/21	ADRENAL GLANDS	0.04	0.005	2.00		Low
05-May-87	147/21	TESTIS	3.32	0.443	166.00		
05-May-87	147/21	SPLEEN	1.3	0.17	65.0		

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.
KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.
PANCREAS PROGRESSIVE RENAL DISEASE, Slight, Multifocal.
ADRENAL GLANDS INFLAMMATION, CHRONIC, Moderate, Multifocal.
Required protocol tissue is missing.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 53

Animal: 86000569 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Dose level: Terminal body weight (kms):	10. (MG/KG)/day 0.53
05-May-87	147/21	LIVER	21.7	4.09	986.4		
05-May-87	147/21	KIDNEY	3.3	0.62	150.0		High
05-May-87	147/21	HEART	1.4	0.26	63.6		Low
05-May-87	147/21	BRAIN	2.2	0.42	100.0		Low
05-May-87	147/21	ADRENAL GLANDS	0.03	0.006	1.36		Low
05-May-87	147/21	TESTIS	3.06	0.577	139.09		
05-May-87	147/21	SPLEEN	0.9	0.17	40.9		

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

THYROID GLAND CYST(S), Slight, Multifocal.

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

LACRIMAL GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

HEART INFLAMMATION, CHRONIC, Mild, Multifocal.

THYMUS Required protocol tissue is missing.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Mild, Multifocal.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86D00569 Sex: Male
 Day of death: 147 Status: Interim sacrifice 1 Group: 7 Dose level: 10. (MG/KG)/day
 Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING Terminal body weight (kms): 0.53

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

KIDNEY INFARCT, Mild, Focal.

URINARY BLADDER Required protocol tissue is missing.

TESTIS DEGENERATION, SEMINIFEROUS EPITHELIUM, Mild, Multifocal.

BONE, FEMUR Required protocol tissue is missing.

CERVICAL LYMPH N Miscellaneous.
 PLASMACYTOSIS, MEDULLARY, Moderate.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY			Individual Animal Data Dump Table Study Number: 86005			PRINTED: 15-May-90 Page: 55		
Animal: 86000597			Study Start Date: 10-Dec-86			SUBCHRONIC/180 DAY FEEDING		
Day of death: 147			Sex: Male			Dose level: 10. (MG/KG)/day		
			Status: Interim sacrifice 1			Terminal body weight (kms): 0.59		
			Group: 7					
Date	Day/week of Study	Organ Name	<< Organ Weights >>		Relative % of		Organ	
			Absolute Organ Weight (gms)	Relative % of Body Weight	Brain Weight		Status	
05-May-87	147/21	LIVER	18.3	3.10	795.7		Low	
05-May-87	147/21	KIDNEY	3.9	0.66	169.6		High	
05-May-87	147/21	HEART	1.9	0.32	82.6			
05-May-87	147/21	BRAIN	2.3	0.39	100.0		Low	
05-May-87	147/21	ADRENAL GLANDS	0.08	0.014	3.48			
05-May-87	147/21	TESTIS	3.69	0.625	160.43			
05-May-87	147/21	SPLEEN	0.7	0.12	30.4			
Tissue			<< Gross Observations >>		Gross Free-Text Comments			
WHOLE BODY			Finding, severity					
			NO LESIONS RECOGNIZED					
Tissue			<< Necropsy		Memos >>			
No necropsy memos recorded on animal			Necropsy memos					
Tissue			<< Pathology Observations >>					
PARATHYROID			Histopathologic diagnoses / Special histological comments					
SALIVARY GLAND			Required protocol tissue is missing.					
			INFLAMMATION, CHRONIC, Slight, Multifocal.					

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 56

Animal: 86D00616 Sex: Male Status: Interim sacrifice 1 Group: 7 Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Day of death: 147 Terminal body weight (kms): 10. (MG/KG)/day
Dose level: 0.70

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	21.9	3.13	1042.9	Low
05-May-87	147/21	KIDNEY	3.7	0.53	176.2	Low
05-May-87	147/21	HEART	1.6	0.23	76.2	Low
05-May-87	147/21	BRAIN	2.1	0.30	100.0	Low
05-May-87	147/21	ADRENAL GLAND	0.07	0.010	3.33	
05-May-87	147/21	TESTIS	3.83	0.547	182.38	
05-May-87	147/21	SPLEEN	0.8	0.11	38.1	

Tissue	Finding, severity	Gross Observations	Gross Free-Text Comments
SPLEEN	NODULAR SURFACE, Mild		2X3MM NODULE ON THE VISCERAL SURFACE.
LIVER	ENLARGED, Trace CONGESTED, Trace		

Tissue	Necropsy memos	Necropsy Memos
No necropsy memos recorded on animal		

Tissue	Histopathologic diagnoses / Special histological comments	Pathology Observations
THYROID GLAND	CYST(S), Slight, Multifocal.	
SALIVARY GLAND	INFLAMMATION, CHRONIC, Multifocal.	
HEART	INFLAMMATION, CHRONIC, Slight.	
SPLEEN	INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.	
LIVER	INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.	

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE DAWLEY

Animal: 86D00616 Sex: Male
 Day of death: 147 Status: Interim sacrifice 1

Individual Animal Data Dump Table
 Study Number: 86005

Study Start Date: 10-Dec-86 Group: 7 SUBCHRONIC/180 DAY FEEDING

PRINTED: 15-May-90
 Page: 57

Dose level: 10. (MG/KG)/day
 Terminal body weight (kms): 0.70

<< P a t h o l o g y O b s e r v a t i o n s >>

Histopathologic diagnoses / Special histological comments

KIDNEY CORTICAL LYMPHOCYTE AGGREGATES, Slight, Multifocal.
 PROGRESSIVE RENAL DISEASE, Slight, Multifocal.

EPIDIDYMUS MICROCYSTIC CHANGE, EPITHELIUM, Slight.

TESTIS DEGENERATION, SEMINIFEROUS EPITHELIUM, Marked.

PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

CERVICAL LYMPH N Miscellaneous.
 PLASMACYTOSIS, MEDULLARY, Slight.

EXTRAOCULAR MM Miscellaneous.
 MYOPATHIC CHANGE, Slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

PRINTED: 15-May-90
Page: 58

Individual Animal Data Dump Table
Study Number: 86005

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: 10. (MG/KG)/day	Organ Status
05-May-87	147/21	LIVER	19.8	2.91			Low
05-May-87	147/21	KIDNEY	3.7	0.54			
05-May-87	147/21	HEART	1.8	0.26			Low
05-May-87	147/21	BRAIN	2.2	0.32			Low
05-May-87	147/21	ADRENAL GLANDS	0.07	0.010			
05-May-87	147/21	TESTIS	3.68	0.541			
05-May-87	147/21	SPLEEN	0.9	0.13			

<< Organ Weights >>

<< Gross Observations >>

Tissue Finding, severity
WHOLE BODY NO LESIONS RECOGNIZED

<< Necropsy Memos >>

Tissue Necropsy memos
No necropsy memos recorded on animal

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

PARATHYROID Required protocol tissue is missing.

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

HEART CHRONIC MYOFIBER DEGENERATION, Slight, Multifocal.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAI, Slight, Multifocal.

PITUITARY GLAND Required protocol tissue is missing.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 59

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Terminal body weight (kms)	Dose level: 10. (MG/KG)/day	Organ Status
<< Organ Weights >>							
05-May-87	147/21	LIVER	18.4	2.83	968.4	Low	Low
05-May-87	147/21	KIDNEY	3.1	0.48	163.2	Low	Low
05-May-87	147/21	HEART	1.6	0.25	84.2	Low	Low
05-May-87	147/21	BRAIN	1.9	0.29	100.0	Low	Low
05-May-87	147/21	ADRENAL GLANDS	0.02	0.003	1.05	Low	Low
05-May-87	147/21	TESTIS	2.96	0.455	155.79		
05-May-87	147/21	SPLEEN	0.7	0.11	36.8		

Tissue	Finding, severity	Gross Observations >>
WHOLE BODY	NO LESIONS RECOGNIZED	Gross Free-Text Comments
Tissue	Necropsy memos	<< Necropsy Memos >>
ADRENAL GLANDS	RIGHT ADRENAL MISSING	

Tissue	Histopathologic diagnoses / Special histological comments	Pathology Observations >>
SALIVARY GLAND	INFLAMMATION, CHRONIC, Mild, Focal.	
LUNGS	HYPERPLASIA, BAL, slight.	
LIVER	INFLAMMATION, CHRONIC, MULTIFOCAL, slight, Multifocal.	
KIDNEY	CORTICAL LYMPHOCYTE AGGREGATES, slight, Multifocal.	

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 60

Animal: 86000660

Study Start Date: 10-Dec-86

SUBCHRONIC/180 DAY FEEDING

Sex: Male

Group: 7

Dose level: 10. (MG/KG)/day

Day of death: 147

Status: Interim sacrifice 1

Terminal body weight (kms): 0.65

Date	Day/week of Study	Organ Name	<< O r g a n W e i g h t s >>			Organ Status
			Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	
05-May-87	147/21	LIVER	24.5	3.77	1065.2	
05-May-87	147/21	KIDNEY	4.1	0.63	178.3	High
05-May-87	147/21	HEART	1.8	0.28	78.3	Low
05-May-87	147/21	BRAIN	2.3	0.35	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.009	2.61	
05-May-87	147/21	TESTIS	3.74	0.575	162.61	
05-May-87	147/21	SPLUEN	0.8	0.12	34.8	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.

LIVER VACUOLIZATION, FOCAL, Mild, Focal.

CECUM GRANULOMA(S), SUBMUCOSA, Moderate, Multifocal.

TURBINATES INFLAMMATION, LYMPHOCYTIC, Slight, Multifocal.

CERVICAL LYMPH N Miscellaneous.
PLASMACYTOSIS, MEDULLARY, Mild.

MESENTERY Miscellaneous.
INFLAMMATION, GRANULOMATOUS, Moderate.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH		Individual Animal Data Dump Table		PRINTED: 15-May-90
DIV OF RES SUPP, PATH SERV GP		Study Number: 86005		Page: 61
PRESIDIO OF SAN FRANCISCO, CA 94129		Study Start Date: 10-Dec-86		SUBCHRONIC/180 DAY FEEDING
RAT/SPRAGUE-DAWLEY		Group: 7		
Animal: 86D00660	Sex: Male		Dose level:	10. (MG/KG)/day
Day of death: 147	Status: Interim sacrifice 1		Terminal body weight (kms):	0.65
<< Pathology Observations >>				
Tissue	Histopathologic diagnoses / Special histological comments			
MESENTERY	ARTERITIS, CHRONIC, Marked.			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Animal: 86D00729 Sex: Male
Day of death: 147 Status: Interim sacrifice 1 Group: 7

Individual Animal Data Dump Table
Study Number: 86005

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

PRINTED: 15-May-90
Page: 62

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	17.9	2.75	942.1	Low
05-May-87	147/21	KIDNEY	3.5	0.54	184.2	
05-May-87	147/21	HEART	1.7	0.26	89.5	Low
05-May-87	147/21	BRAIN	1.9	0.29	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.009	3.16	
05-May-87	147/21	TESTIS	3.41	0.525	179.47	
05-May-87	147/21	SPLEEN	0.7	0.11	36.8	

Terminal body weight (kms): 10. (MG/KG)/day 0.65

Tissue Finding, severity << Gross Observations >>
WHOLE BODY NO LESIONS RECOGNIZED Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>
No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>
THYROID GLAND CYST(S), Slight, Focal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86D00559 Sex: Male
 Day of death: 175 Status: Final sacrifice

Study Start Date: 10-Dec-86 Group: 8 SUBCHRONIC/180 DAY FEEDING

Study Number: 86005 Dose level: 10. (MG/KG)/day
 Terminal body weight (kms): 0.66

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

PANCREAS INFLAMMATION, CHRONIC, Slight, Multifocal.

EXTRAOCULAR MM Miscellaneous.
 MYOPATHIC CHANGE, Slight.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 65

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Animal: 8600571 Sex: Male Status: Final sacrifice Group: 8 Dose level: 10. (MG/KG)/day
Day of death: 175 Terminal body weight (kms): 0.70

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	17.7	2.53	842.9	Low
05-May-87	147/21	KIDNEY	3.3	0.47	157.1	Low
05-May-87	147/21	HEART	1.6	0.23	76.2	Low
05-May-87	147/21	BRAIN	2.1	0.30	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.009	2.86	
05-May-87	147/21	TESTIS	3.47	0.496	165.24	
05-May-87	147/21	SPLEEN	0.7	0.10	33.3	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

KIDNEY DILATED RENAL PELVIS, Trace THE PELVIS OF THE RIGHT KIDNEY IS 2 X 4 MM.

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

KIDNEY PROGRESSIVE RENAL DISEASE, Slight.
DILATED RENAL PELVIS, Present.

PANCREAS INFLAMMATION, CHRONIC, Slight, Multifocal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 66

Animal: 86000608 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Day of death: 175 Status: Final sacrifice Group: 8 Terminal body weight (kms): 10. (MG/KG)/day
Dose level: 0.53

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	16.6	3.13	721.7	Low
05-May-87	147/21	KIDNEY	3.5	0.66	152.2	High
05-May-87	147/21	HEART	1.4	0.26	60.9	Low
05-May-87	147/21	BRAIN	2.3	0.43	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.08	0.015	3.48	
05-May-87	147/21	TESTIS	3.07	0.579	133.48	
05-May-87	147/21	SPLEEN	0.8	0.15	34.8	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

THYROID GLAND CYST(S), Slight, Focal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.

PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP, PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY				Individual Animal Data Dump Table Study Number: 86005				PRINTED: 15-May-90 Page: 67			
Animal: 86D00622				Sex: Male				SUBCHRONIC/180 DAY FEEDING			
Day of death: 175				Status: Final sacrifice				Group: 8			
				Study Start Date: 10-Dec-86				Dose level: 10. (MG/KG)/day			
				Terminal body weight (kms): 0.69							
				Organ Weights				Relative % of			
				Absolute Organ Weight (gms)				Brain Weight			
				Relative % of Body Weight				Organ Status			
Date				Day/week of Study				Organ Name			
05-May-87				147/21				LIVER			
05-May-87				147/21				KIDNEY			
05-May-87				147/21				HEART			
05-May-87				147/21				BRAIN			
05-May-87				147/21				ADRENAL GLANDS			
05-May-87				147/21				TESTIS			
05-May-87				147/21				SPLEEN			
								3.43			
								0.55			
								0.26			
								0.32			
								0.010			
								0.549			
								0.12			
								1077.3			
								172.7			
								81.8			
								100.0			
								3.18			
								172.27			
								36.4			
								Low			
								Low			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH		Individual Animal Data Dump Table		PRINTED: 15-May-90
DIV OF RES SUPP, PATH SERV GP		Study Number: 86005		Page: 68
PRESIDIO OF SAN FRANCISCO, CA 94129		Study Start Date: 10-Dec-86		SUBCHRONIC/180 DAY FEEDING
RAT/SPRAGUE-DAWLEY		Group: 8		
Animal: 86D00622	Sex: Male		Dose level: 10. (MG/KG)/day	
Day of death: 175	Status: Final sacrifice		Terminal body weight (kms): 0.69	
Tissue Histopathologic diagnoses / Special histological comments				
<< Pathology Observations >>				
PITUITARY GLAND CYST(S), PARS DISTALIS, Slight, Multifocal.				

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 69

Animal: 86000651 Sex: Male Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING
Day of death: 175 Status: Final sacrifice Group: 8 Terminal body weight (kms): 10. (MG/KG)/day
Dose level: 0.67

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	18.7	2.79	850.0	Low
05-May-87	147/21	KIDNEY	3.4	0.51	154.5	
05-May-87	147/21	HEART	1.6	0.24	72.7	Low
05-May-87	147/21	BRAIN	2.2	0.33	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.009	2.73	
05-May-87	147/21	TESTIS	3.36	0.501	152.73	
05-May-87	147/21	SPLEEN	0.8	0.12	36.4	

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild, Multifocal.

LIVER INFLAMMATION, CHRONIC, MULTIFOCAL, Slight, Multifocal.

CERVICAL LYMPH N Miscellaneous.
PLASMACYTOSIS, MEDULLARY, Moderate.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86000524 Sex: Male
 Day of death: 175 Status: Final sacrifice

Individual Animal Data Dump Table
 Study Number: 86005

Study Start Date: 10-Dec-86 Group: 9 SUBCHRONIC/180 DAY FEEDING

PRINTED: 15-May-90
 Page: 71

Dose level: 10. (MG/KG)/day
 Terminal body weight (kms): 0.60

<< Pathology Observations >>

Tissue Histopathologic diagnoses / Special histological comments

CERVICAL LYMPH N Miscellaneous.
 PLASMACYTOSIS, MEDULLARY, Mild.

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH										Individual Animal Data Dump Table										PRINTED: 15-May-90																																																	
DIV OF RES SUPP, PATH SERV GP										Study Number: 86005										Page: 72																																																	
PRESIDIO OF SAN FRANCISCO, CA 94129										Study Start Date: 10-Dec-86										SUBCHRONIC/180 DAY FEEDING																																																	
RAT/SPRAGUE-DAWLEY										Sex: Male										Group: 9																																																	
Animal: 86D00537										Status: Final sacrifice										Dose level: 10. (MG/KG)/day																																																	
Day of death: 175										Terminal body weight (kms): 0.58																																																											
										<< O r g a n W e i g h t s >>																																																											
Date										Day/week of Study										Organ Name										Absolute Organ Weight (gms)										Relative % of Body Weight										Relative % of Brain Weight										Organ Status									
05-May-87										147/21										LIVER										21.3										3.69										905.2																			
05-May-87										147/21										KIDNEY										3.6										0.63										154.6										High									
05-May-87										147/21										HEART										1.5										0.27										65.3										Low									
05-May-87										147/21										BRAIN										2.4										0.41										100.0										Low									
05-May-87										147/21										ADRENAL GLANDS										0.07										0.012										2.85																			
05-May-87										147/21										TESTIS										3.82										0.662										162.22										High									
05-May-87										147/21										SPLEEN										1.0										0.17										40.8																			
										<< G r o s s O b s e r v a t i o n s >>																																																											
Tissue										Finding, severity										Gross Free-Text Comments																																																	
WHOLE BODY										NO LESIONS RECOGNIZED																																																											
										<< N e c r o p s y M e m o s >>																																																											
Tissue										Necropsy memos																																																											
No necropsy memos recorded on animal																																																																					
										<< P a t h o l o g y O b s e r v a t i o n s >>																																																											
Tissue										Histopathologic diagnoses / Special histological comments																																																											
SPLEEN										INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.																																																											
KIDNEY										MINERALIZATION, PELVIS, Moderate.																																																											
PANCREAS										INFLAMMATION, CHRONIC, Slight, Focal.																																																											

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
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PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 73

Study Start Date: 10-Dec-86 SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	19.0	3.26	928.4	Low
05-May-87	147/21	KIDNEY	3.5	0.60	171.1	High
05-May-87	147/21	HEART	1.5	0.26	75.0	Low
05-May-87	147/21	BRAIN	2.0	0.35	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.011	3.12	
05-May-87	147/21	TESTIS	3.58	0.613	174.77	
05-May-87	147/21	SPLEEN	0.8	0.13	37.5	

Animal: 86000547 Sex: Male
Day of death: 175 Status: Final sacrifice

Group: 9

Terminal body weight (kms): 10. (MG/KG)/day
Dose level: 0.58

Tissue Finding, severity << Gross Observations >>
Gross Free-Text Comments

WHOLE BODY NO LESIONS RECOGNIZED

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

PARATHYROID Required protocol tissue is missing.

SALIVARY GLAND INFLAMMATION, CHRONIC, Mild.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Moderate.

KIDNEY PROGRESSIVE RENAL DISEASE, Slight.

EPIDIDYMUS MICROCYSTIC CHANGE, EPITHELIUM, Mild, Focal.

PANCREATIC LN Miscellaneous.
BROWN PIGMENT IN MACROPHAGES, Moderate.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
DIV OF RES SUPP, PATH SERV GP
PRESIDIO OF SAN FRANCISCO, CA 94129
RAT/SPRAGUE-DAWLEY

Individual Animal Data Dump Table
Study Number: 86005

PRINTED: 15-May-90
Page: 74

Animal: 86D00591 Sex: Male
Day of death: 175 Status: Final sacrifice

Study Start Date: 10-Dec-86

SUBCHRONIC/180 DAY FEEDING

Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status
05-May-87	147/21	LIVER	24.3	3.32	1167.8	Low
05-May-87	147/21	KIDNEY	4.7	0.64	226.2	High
05-May-87	147/21	HEART	2.0	0.27	94.4	Low
05-May-87	147/21	BRAIN	2.1	0.28	100.0	Low
05-May-87	147/21	ADRENAL GLANDS	0.06	0.008	2.79	
05-May-87	147/21	TESTIS	3.59	0.490	172.60	
05-May-87	147/21	SPLEEN	0.4	0.06	19.7	

Tissue Finding, severity << Gross Observations >>
KIDNEY CYST(S) Gross Free-Text Comments

Tissue Necropsy memos << Necropsy Memos >>

No necropsy memos recorded on animal

Tissue Histopathologic diagnoses / Special histological comments << Pathology Observations >>

SALIVARY GLAND INFLAMMATION, CHRONIC, Slight, Multifocal.

LACRIMAL GLAND INFLAMMATION, CHRONIC, Slight, Focal.

SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Mild.

KIDNEY PROGRESSIVE RENAL DISEASE, Mild.

PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.

PITUITARY GLAND Required protocol tissue is missing.

PATHOLOGY ANNEX B (cont.)

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH DIV OF RES SUPP. PATH SERV GP PRESIDIO OF SAN FRANCISCO, CA 94129 RAT/SPRAGUE-DAWLEY				Individual Animal Data Dump Table Study Number: 86005				PRINTED: 15-May-90 Page: 75																																																											
Animal: 86D00518 Day of death: 175				Sex: Male Status: Flnal sacrifice				SUBCHRONIC/180 DAY FEEDING																																																											
Study Start Date: 10-Dec-86				Group: 9				Dose level: 10. (MG/KG)/day Terminal body weight (kms): 0.70																																																											
<div><div><< O r g a n W e i g h t s >></div><table><thead><tr><th>Date</th><th>Day/week of Study</th><th>Organ Name</th><th>Absolute Organ Weight (gms)</th><th>Relative % of Body Weight</th><th>Relative % of Brain Weight</th><th>Organ Status</th></tr></thead><tbody><tr><td>02-Jun-87</td><td>175/25</td><td>LIVER</td><td>23.0</td><td>3.30</td><td>1123.0</td><td>Low</td></tr><tr><td>02-Jun-87</td><td>175/25</td><td>KIDNEY</td><td>4.0</td><td>0.57</td><td>195.1</td><td>High</td></tr><tr><td>02-Jun-87</td><td>175/25</td><td>HEART</td><td>1.8</td><td>0.25</td><td>86.3</td><td>Low</td></tr><tr><td>02-Jun-87</td><td>175/25</td><td>BRAIN</td><td>2.1</td><td>0.29</td><td>100.0</td><td>Low</td></tr><tr><td>02-Jun-87</td><td>175/25</td><td>ADRENAL GLANDS</td><td>0.06</td><td>0.008</td><td>2.88</td><td></td></tr><tr><td>02-Jun-87</td><td>175/25</td><td>TESTIS</td><td>3.74</td><td>0.536</td><td>182.55</td><td></td></tr><tr><td>02-Jun-87</td><td>175/25</td><td>SPLEEN</td><td>0.8</td><td>0.11</td><td>37.5</td><td></td></tr></tbody></table></div>												Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status	02-Jun-87	175/25	LIVER	23.0	3.30	1123.0	Low	02-Jun-87	175/25	KIDNEY	4.0	0.57	195.1	High	02-Jun-87	175/25	HEART	1.8	0.25	86.3	Low	02-Jun-87	175/25	BRAIN	2.1	0.29	100.0	Low	02-Jun-87	175/25	ADRENAL GLANDS	0.06	0.008	2.88		02-Jun-87	175/25	TESTIS	3.74	0.536	182.55		02-Jun-87	175/25	SPLEEN	0.8	0.11	37.5	
Date	Day/week of Study	Organ Name	Absolute Organ Weight (gms)	Relative % of Body Weight	Relative % of Brain Weight	Organ Status																																																													
02-Jun-87	175/25	LIVER	23.0	3.30	1123.0	Low																																																													
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02-Jun-87	175/25	HEART	1.8	0.25	86.3	Low																																																													
02-Jun-87	175/25	BRAIN	2.1	0.29	100.0	Low																																																													
02-Jun-87	175/25	ADRENAL GLANDS	0.06	0.008	2.88																																																														
02-Jun-87	175/25	TESTIS	3.74	0.536	182.55																																																														
02-Jun-87	175/25	SPLEEN	0.8	0.11	37.5																																																														
<div><div><< G r o s s O b s e r v a t i o n s >></div><div>Gross Free-Text Comments</div></div>																																																																			
Tissue Finding, severity																																																																			
WHOLE BODY NO LESIONS RECOGNIZED																																																																			
<div><div><< N e c r o p s y M e m o s >></div><div>Necropsy memos</div></div>																																																																			
No necropsy memos recorded on animal																																																																			
<div><div><< P a t h o l o g y O b s e r v a t i o n s >></div><div>Histopathologic diagnoses / Special histological comments</div></div>																																																																			
Tissue																																																																			
THYROID GLAND CYST(S), Slight, Focal.																																																																			
SPLEEN INCREASED BROWN PIGMENT IN MACROPHAGES, Slight.																																																																			
KIDNEY PROGRESSIVE RENAL DISEASE, Mild.																																																																			
PANCREAS INFLAMMATION, CHRONIC, Mild, Multifocal.																																																																			
SKIN INFLAMMATION, CHRONIC, Moderate.																																																																			
EYES & OPTIC N. Required protocol tissue not examined.																																																																			
CERVICAL LYMPH N Miscellaneous.																																																																			
PLASMOCYTOSIS, MEDULLARY, Mild.																																																																			

Appendix O (cont.): PATHOLOGY

LETTERMAN ARMY INSTITUTE OF RESEARCH
 DIV OF RES SUPP, PATH SERV GP
 PRESIDIO OF SAN FRANCISCO, CA 94129
 RAT/SPRAGUE-DAWLEY

Animal: 86D00518 Sex: Male
 Day of death: 175 Status: Final sacrifice

Study Start Date: 10-Dec-86 Group: 9 SUBCHRONIC/180 DAY FEEDING

Study Number: 86005 Dose level: 10. (MG/KG)/day
 Terminal body weight (kms): 0.70

<< Pathology Observations >>

Histopathologic diagnoses / Special histological comments

PREPUTIAL GLAND Miscellaneous.
 INFLAMMATION, CHRONIC, Mild, Multifocal.

PRINTED: 15-May-90
 Page: 76

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